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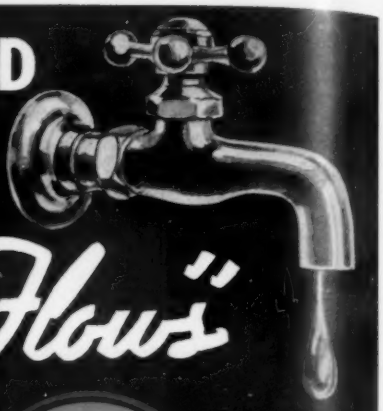
WATER WORKS MEN SAID



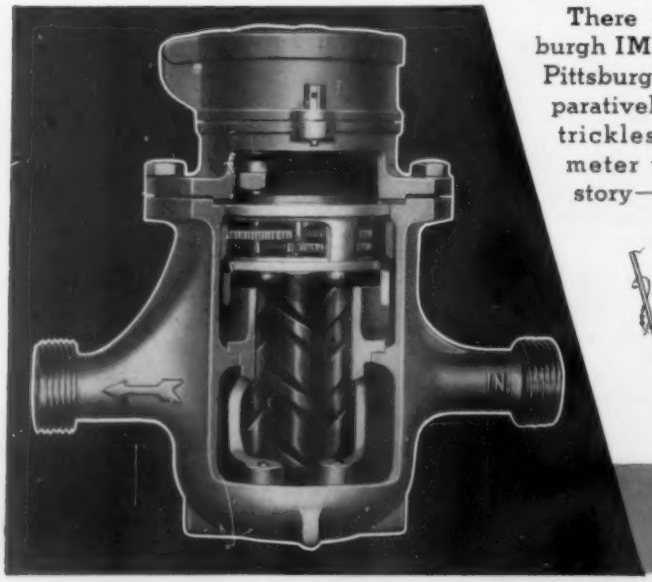
"Measure the Low Flows"

THE PITTSBURGH IMO IS THE METER THAT WILL

Practically every published paper on meter-measurement during the past two years has made reference to the revenue lost through the failure of meters to accurately measure low flows. By low flows is meant those of less than 1 g.p.m.

It has been estimated that between 25% and 50% of the total water used by the average household is consumed at rates of less than 1 g.p.m. It follows that if these flows were accurately measured, a considerable increase in revenue could be obtained.

Until the introduction of the Pittsburgh IMO Meter, only a relatively small amount of water was accurately measured at rates of below 1/4 g.p.m., since this was the lowest test flow required by any meter specification. The Pittsburgh IMO is built to specifications which guarantee an accuracy of 98% at 1/4 g.p.m. and 90% at 1/12 g.p.m. In fact it is commonplace for Pittsburgh IMO Meters to register 93% at 1/24 g.p.m. These accuracy specifications definitely assure increased revenue on any service where the Pittsburgh IMO Meter is installed.



There is no other meter like the Pittsburgh IMO. It has been determined that the Pittsburgh IMO will pay for itself in a comparatively short time through measuring the trickles of water which the conventional meter will not record. Get the complete story—write for Bulletin W-525.

Quietness Is Another Feature

The Pittsburgh IMO, in addition to being the most accurate, is also the quietest meter ever built. When the meter is operating, there is no "clicking" noise to annoy your consumers. Smooth turning rotors, precision cut to mesh perfectly, replace noisy, slapping discs.

PITTSBURGH EQUITABLE METER COMPANY
MERCO NORDSTROM VALVE CO.
NEW YORK BUFFALO PHILADELPHIA DES MOINES CHICAGO
KANSAS CITY TULSA LOS ANGELES *Main Offices* - PITTSBURGH, PA. MEMPHIS OAKLAND

Transforming Emergency into Opportunity

Constructive Policy Must Replace Grudging Compromises

THE facts as to unemployment are that we always have had a certain number of temporarily, habitually, or cyclically unemployed workers; and the prospect is that we always will have unemployment in varying degrees. The only change today is public recognition and acceptance of responsibility. The support of the unemployed has been transferred from a direct charge on scattered private purses to a segregated relief load accepted as a public charge. Who in this nation today will revoke the public acceptance of this charge and throw this reservoir of idle workers back to dependence on private purses? Tomorrow perhaps, but not today—and in the meantime the cost continues. . . .

Succeeding doses of feverish activities labeled "temporary" have bred a chain of hectic cycles in a program seeking stability. If we are to continue to have labor supported at the public expense, the only non-disturbing use of this labor is in public works. Then we must awake to the fact that over some period of the future there will be many workers available for the construction of public works.

Until now, our local public works programs have resulted only from grudging compromises between the self-protective instincts of taxpayers and the crying needs of communal living. Our communities have grown haphazardly. They are filled with crazy inconveniences and unsafe makeshifts. At last the man-power is on tap to utterly change the complexion of our communities at no labor cost, since available man-power already is supported at the public expense. Common sense dictates that this man-power be used effectively to achieve carefully planned results. . . .

Only by projected planning, with advance provisions for financing and with advanced design, can delay in the creation of employment through public works be avoided, and quick adjustment to changing employment needs be assured. Only by such careful planning can a rational integration of public needs with capacity to pay be worked out, even when employment is not the specific objective.

To make possible the meeting of these needs, I submit the following as a necessary public concept. The projected planning and financing of local and regionally integrated public facilities is as much a responsibility of local, state and Federal governments as is the now accepted cost of the detailed design of such facilities; and every unit of government must create an adequate budget for some kind of continuing authority to project and plan its physical conveniences ahead of the moment of need.

FREDERICK H. MCDONALD,
Consulting Engineer, Atlanta, Ga.;
Chairman, Board of Consultants,
Community and Industrial Research Institute.

Public Works and Unemployment Relief

Excerpts from a Symposium held at the Annual Meeting of the American Society of Civil Engineers in New York, January 19, 1939.

The text of the two papers here abstracted will appear in the February issue of "Civil Engineering."

Local Planning Must Implement National Planning

WHO are the unemployed and what can they do? Are they willing to work? We find from our WPA rolls that these millions of people are a cross-section of our American population who always have worked when they had an opportunity to do so; they are ambitious and seeking means of making a living. It is true that a lot of them after months and years of enforced idleness have lost their morale, and insufficient medical care and lack of proper food have impaired their health. But it is remarkable how rapidly these people respond to proper treatment, and the main medicine used in this treatment is a job that pays a living wage. . . .

I recall an incident in 1936, when a delegation came to my office complaining bitterly about the "reliefers" in their community. They stated that these men had been working half-heartedly on an airport project for months and were making no visible progress, and they wanted them either to go to work or quit. This delegation was composed of the leading citizens of the community, and I answered their question by asking them a few myself. First I asked who these people were. The answer was that some had come in to work in an industry that had failed, others had drifted into the work program when local industry had been forced to lay them off. My next question was: Did they really work in private industry? And the answer was, "Why, certainly!"

Then I told them that we had worked for months to try to get the local public officials to develop projects of a type that these men could do, but had met with no success. The only thing offered was the airport job, and even then the local officials had insisted on an untrained politician to do the engineering work and expected us to do the job with hand tools when heavy machinery was required. The next step was to ask the delegation if they didn't have something that needed to be done in their city that these men could do—and immediately streets, schools, and sewers were suggested. I told them that the men would do the work if they would cooperate with the projects, and the deal was closed. Today this community boasts of a number of fine new public facilities, and the same people that criticized now have only the highest praise for the efficient and intelligent work that is being done. This same story has been duplicated in hundreds of communities.

ROBERT L. MACDOUGALL,
Assistant Administrator and State Engineer,
Works Progress Administration of Georgia,
Atlanta, Ga.

To Study Economics and Timing of Public Construction

Appointment of a Technical Public Works Committee was announced on January 26 by the National Resources Committee. Colonel Henry M. Waite was named Chairman and Frank W. Herring, of the American Public Works Association, Vice-Chairman. Other members are F. E. Schmitt, *Engineering News-Record*; Otto T. Mallery, member, Pennsylvania State Planning Board; William Stanley Parker, Construction League of America; Frederick J. Lawton, Bureau of the Budget; Corrington Gill, WPA; Fred Schnepfe, PWA; Lowell Chawner, Department of Commerce; A. F. Hinrichs, Department of Labor, and Lt. Col. Paul W. Baade, War Department.

This group has been asked to assist the National Resources Committee in continuing its preparation of six-year programs of Federal public works and in stimulating the preparation of such capital budget programs by states and cities. In addition, the new committee will undertake studies to determine the most effective utilization of state and local public works for stabilizing the construction industry and to analyze the plan of public construction activities in providing employment and increasing the national income.

"I Wonder What Time My Daddy Will Telephone?"

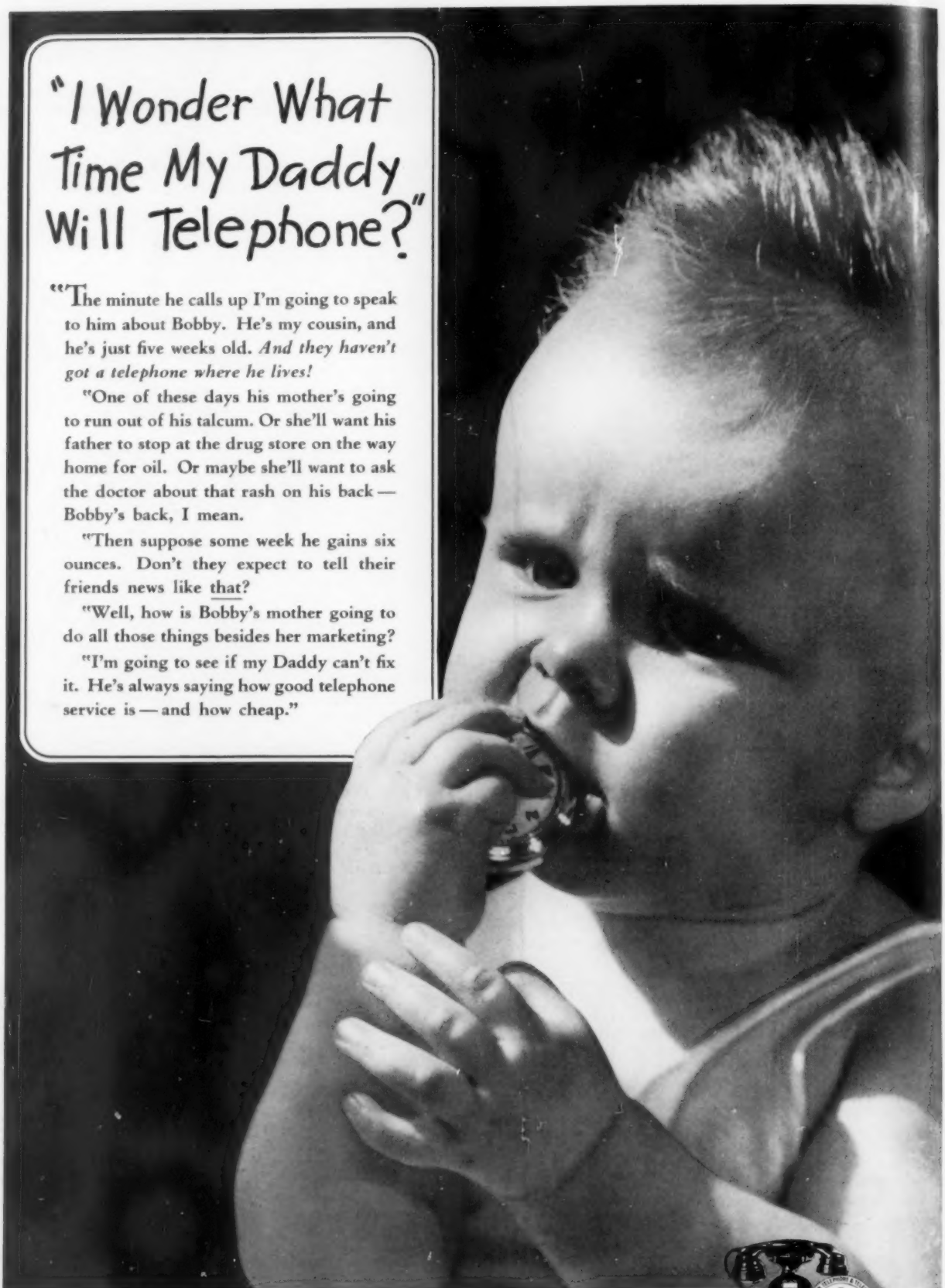
"The minute he calls up I'm going to speak to him about Bobby. He's my cousin, and he's just five weeks old. *And they haven't got a telephone where he lives!*

"One of these days his mother's going to run out of his talcum. Or she'll want his father to stop at the drug store on the way home for oil. Or maybe she'll want to ask the doctor about that rash on his back — Bobby's back, I mean.

"Then suppose some week he gains six ounces. Don't they expect to tell their friends news like that?

"Well, how is Bobby's mother going to do all those things besides her marketing?

"I'm going to see if my Daddy can't fix it. He's always saying how good telephone service is — and how cheap."



BELL TELEPHONE SYSTEM

You are cordially invited to visit the Bell System exhibit at the Golden Gate International Exposition, San Francisco

During February we hope you will remember to mention THE AMERICAN CITY.

Our Municipal Notebook

Sprinklers Conquer Hangar Fires

OF the nearly 800 municipal airports in the United States, fewer than a hundred are equipped with sprinklers, which is the only present adequate protection possible for such a structure and its expensive contents. The fact that an airport is frequently distant from municipal fire apparatus is the least of several first-rate hazards. The chief hazards are the wide open space of the hangar and the inflammability of the airplanes, which often crowd one another with overlapping combustible wings. The only possible safeguard developed thus far is a modern automatic sprinkler system.

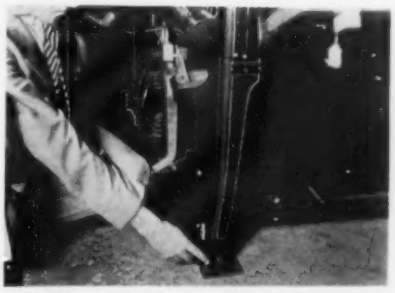
One of the most recent hangar fires occurred on the night of November 11, 1938, at the Shushan Municipal Airport near New Orleans, La. There were 32 airplanes in the hangar, most of them with fabric-covered wings and fuselages and carrying gasoline in their tanks. The nearest municipal fire station was five miles away; only one mechanic remained in the Moffat hangar. This man was using a pair of big lamps to dry "dope" with which he had just repaired a wing, when the heat touched off a blaze which had all the makings of a disaster. There was nothing he could do except try to save himself.

Then the Rockwood Dualguard Deluge System tripped automatically—in less than a minute of the first flash, and within five minutes the fire was extinguished. By the time the nearest fire department had responded to the telephone call, the danger had passed, with a $1,700 damage.

This hangar is 200 x 100 feet in plan by about 37 feet high. The ceiling area is divided into four equal 50 x 100-foot sections, each protected by a complete sprinkler system of this new type having 72 sprinkler heads with six *heat*-actuated devices controlling the main valve supplying water to the open sprinkler heads when needed. A temperature increase at the rate of 1 degree in 20 seconds trips the deluge valve.

Commenting on this fire, Chief Engineer Horatio Bond of the National Fire Protection Association says:

"The important lesson is that the sprinklers confined this fire to the immediate vicinity of a single plane. If they had had to wait for manual protection, such as a fire department might give with hose streams, they would probably have lost every plane in the building. The sprinklers not only saved this loss but prevented the interruption to service which might have been much more serious from the standpoint of the airport management."



STEADIER AND QUIETER ACCOUNTING
A further use of rubber as an absorber of noise and vibration is suggested by this Goodyear Universal Vibration Dampener placed under the feet of an I.B.M. electrical accounting machine

(Continued on page 2, column 3)

Town Passes Up Chance To Cool Off Its Jitterbugs

Fearing for Ice, New Rochelle Bars Hot Music for Skaters

Special to the Herald Tribune

NEW ROCHELLE, N. Y., Jan. 27.—Charles L. Broder, manager of city parks here, ruled today that dance music would not be permitted at any public ice skating pond because "a thousand jitterbugs hitting the down beat simultaneously might drop them right through the ice and into fourteen or fifteen feet of water."

Mr. Broder said he had received a number of requests for permission to have swing bands play at one or more of the city's four skating places.

FOR THE SAFETY OF JITTERBUGS
From the *New York Herald Tribune*

Parking Meters in Dallas

THE August issue of THE AMERICAN CITY asserts that "many of the traffic surveys recently made for and by cities carefully avoid even the mention of parking meters." In the December issue, L. W. Tazewell, Director of Public Safety, Norfolk, Va., stated that the subject was rather completely covered in the "Traffic Survey of the City of Norfolk."

May we add to this, that a year ago we issued "A Survey of Traffic Conditions in the City of Dallas, Texas, with Checks of Obedience to Traffic Laws," in which parking-meter operation was covered in detail. A few copies are still available for responsible authorities.

R. L. JONES,
Chief of Police, Dallas, Texas.

SAVED BY SPRINKLERS — HAD NO SPRINKLERS

Within eight months, fires occurred at the Miami, Fla., Municipal Airport, which had no sprinkler protection (right), and the New Orleans Shushan Municipal Airport, which has a modern sprinkling system (left). Loss of the Miami hangar and ten airplanes cost $360,000; damage to planes in the left-hand hangar cost $1,700 out of a total risk of $450,000

ELEVATED STORAGE

Naperville again chooses

ELEVATED storage is not new to the city of Naperville, Illinois, for their original water supply system included the installation of a 100,000-gal. tank. This first tank, however, has been in service for over thirty years and it was recently found advisable to install a new elevated tank of sufficient capacity to replace the old tank and to also provide an ample supply for years to come. The necessary storage is now available in the modern 500,000-gal. Horton radial-cone bottom tank illustrated at the right.

Please address our nearest office for information.

CHICAGO BRIDGE & IRON COMPANY

Chicago . . . . . 2127 Old Colony Bldg.
New York . . . . . 3308-165 Broadway Bldg.
Cleveland . . . . . 2236 Rockefeller Bldg.
Detroit . . . . . 1501 Lafayette Bldg.
Philadelphia . . 1616 "1700" Walnut St. Bldg.
Boston . . . . . 1501 Consolidated Gas Bldg.
Birmingham . . . . . 1502 N. Fiftieth Street
Dallas . . . . . 1406 Liberty Bank Bldg.
San Francisco . . . . . 1033 Rialto Bldg.
Houston . . . . . 2919 Main Street
Tulsa . . . . . 1625 Hunt Bldg.
Los Angeles . . . . . 1403 Wm. Fox Bldg.

Fabricating plants in CHICAGO, BIRMINGHAM, and GREENVILLE, PA.

Municipal Street Paving

A NEW CONCRETE PAVEMENT FOR PEORIA, ILL.

A diesel D4 tractor pulling a Lakewood subgrader ahead of pouring the concrete slab on a West Bluff street. The tractor operated, in heavy clay soil, 8 hours a day on 1.5 gallons of 7-cent fuel per hour

Large Asphalt Plant Serves New York City

THE Queens asphalt plant of New York City with its various buildings is situated on Flushing River between Willets Point Boulevard and Harper Street, in Corona, on Long Island. The site covers about 5¼ acres, and the dock frontage is 608 feet. The asphalt plant and its equipment are located near the dock front on the east side of the plot. The plant itself is the two-unit type; that is, each plant is separate and independent of the other, and each unit consists of a drumdryer, cold and hot material elevators, vibrating screens, a hot storage bin, a weigh-box, an asphalt bucket, a 2-ton Hetherington & Berner pugmill mixer, and a dust collector. The plant is electrically operated throughout. The mixer man can cut out the whole plant or each unit as he desires.

The aggregates are brought alongside the dock and unloaded by one gasoline and one steam crane into four steel bins, each having a capacity of 150 cubic yards. The two end bins have one opening each, and the two center bins have two openings each. Attached to each opening is a vibrating feeder which shakes the material onto the belt conveyors, one belt conveyor feeding each cold-material elevator. The belt conveyors are controlled from the mixing platform.

The asphaltic cement is brought alongside in barges at a temperature of not less than 275 degrees F. and pumped into two 80,000-gallon storage tanks with 2-inch double banked heating coils. The asphalt is pumped from the storage tanks over into two 5,000-gallon booster tanks, which are heated by means of fuel-oil burners. The asphalt is then pumped to the asphalt weigh buckets by means of two cross-connected asphalt pumps, which are in continuous operation. The drumdryers and booster tanks are heated by fuel-oil burners. Steam for the buildings, heating coils, fuel-oil burners, stiffleg derrick, steam-jacketed asphalt pipes and for other purposes is supplied by three 300-hp boilers, fired by fuel-oil burners.

Each plant unit has a capacity of 70 tons of mixed asphalt per hour, or a total of 140 tons per hour for the two units. Two stiffleg derricks operate on the dock for unloading the sand, stone, cinders, gravel and other highway materials. The electric stiffleg derrick operates a 2-cubic-yard bucket, and the steam stiffleg derrick operates a 1¼-yard bucket. Each unit loads into the two 150-cubic-yard steel bins.

The buildings housing the asphalt plant are fabricated with steel and Transite, making them as fireproof as possible. The electric lights for the plant are placed at all important points, with enough outlet receptacles to take off power for drills and other equipment.

The plant control for each unit is operated from the mixing platform by each mixer man. Potentiometers control the temperatures for the drumdryers and the asphalt stills. Pyrometers are used as a check at the cold-material elevator feeds. Tankometer gages are used to measure the quantity of asphalt and fuel oil in the storage tanks. All the buildings, with the exception of the asphalt plant structures, which are a part of the general layout, are of brick, and all the structures are on pile foundations. The approximate cost of the entire plant is $1,000,000. This plant is under the jurisdiction of the Superintendent of Highways, President, Borough of Queens.

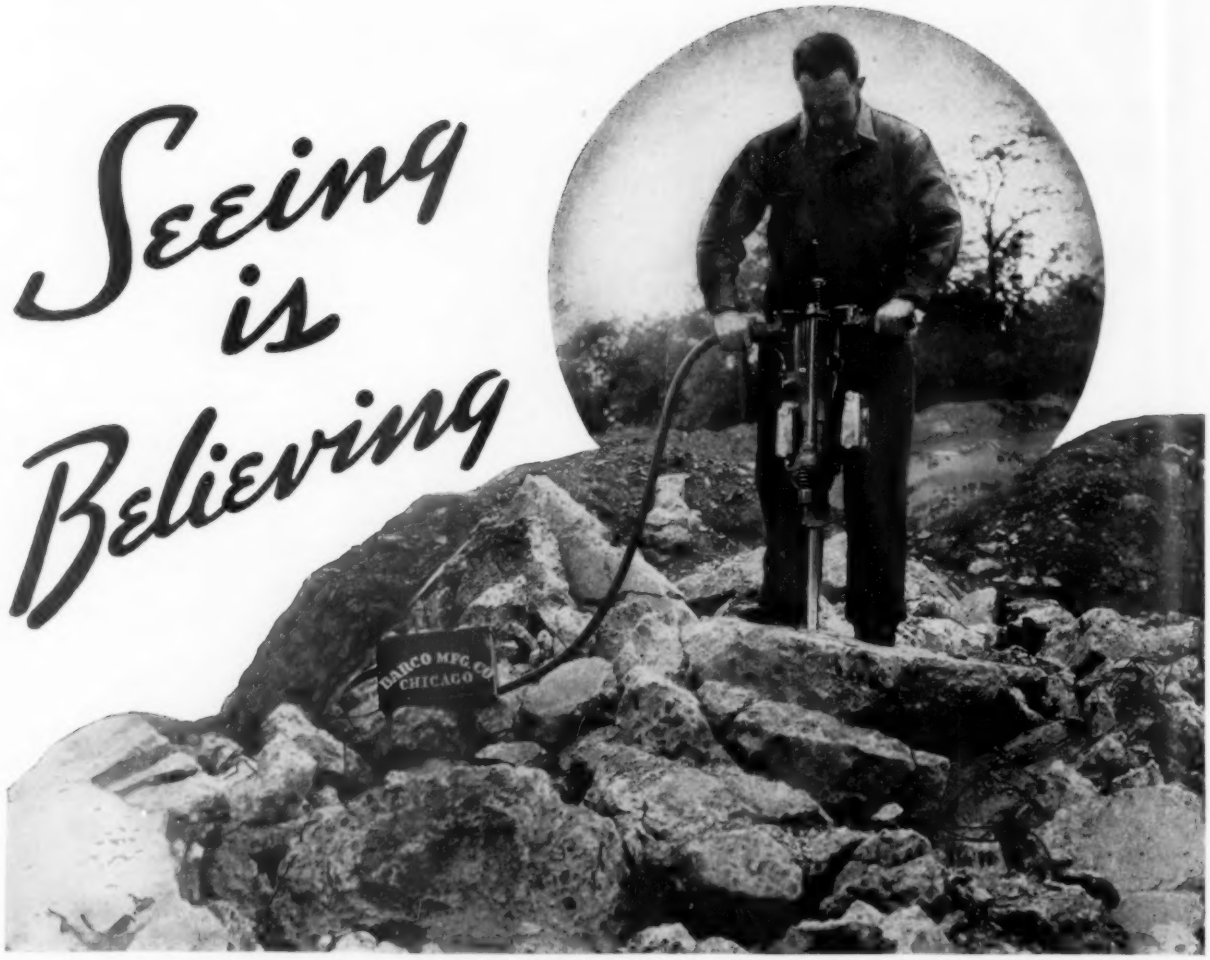
Paving the Streets of Hazlewood, N. C.

HAZLEWOOD, N. C., is a thriving community of 1,200 population which believes in paving all its streets. Using a 9 x 16 Universal crusher and an Allis-Chalmers IU tractor, the town has found it a simple matter to improve its unpaved streets. They were first plowed with the tractor and road machine, the grading was completed, and then field stone was hauled in and placed in stock piles along the shoulders. The portable Universal crusher was brought in and set up at the piles, crushing the stone for paving the curb and gutters and the walks.

Following this, the crusher comes back down the street to the piles and crushes the material for the roadway. The stone is distributed by wheelbarrows, and about 150 feet of street is a good day's run. This crushed stone is traffic-bound, after which a Littleford distributor owned by the State Highway Department applies the asphalt surface treatment.

AN ADAMS NO. 50 HEAVY-DUTY MOTOR GRADER OWNED BY THE TOWN OF OXFORD, MAINE, MAINTAINING A SHOULDER ALONG A CONCRETE PAVEMENT

Seeing is Believing



● Road Builders who attend the A. G. C. Convention in San Francisco will have as a primary aim first hand information of equipment that can help them save time . . . reduce costs . . . solve problems. There's nothing like the evidence of your own eyes.

That's why we would like to have you ask for a demonstration of the BARCO Portable Gasoline Hammer on your own job. The kind of work is your choice. No matter what demonstration you call for, the BARCO will come through in a manner that will convince your eyes that here's a tool which belongs as a permanent part of your equipment . . . because it assures economies that will pay big dividends on its moderate cost.

BARCO MANUFACTURING COMPANY
1803 W. Winnemac Ave., Chicago, Ill.

BARCO *Portable* GASOLINE HAMMER

Sewers and Sewage Treatment

Non-Leaking Sewer Joint for Vitrified Clay Pipe

IN a paper presented before the Maryland-Delaware Water and Sewerage Association, William A. Goff, consulting engineer, of Philadelphia, described in some detail a joint which he has been using for the past seven years in vitrified clay pipe sewers to minimize infiltration. The joint consists of oakum packing approximately 1 inch in depth, on top of which is poured a hot bituminous joint approximately 1½ inches in depth, and then an outside cement mortar fillet wrapped in muslin cloth tied tightly in place.

Mr. Goff states that such a joint sounds complicated, but that his experience shows that after the ditch men become experienced the joint can be made rapidly and consistently perfect. Perhaps this joint does add a few cents to the cost of the sewer per foot, but an owner is buying a sewerage system and he wants a good one. It is distinctly advantageous to avoid infiltration, particularly when the sewer goes to a treatment plant.

In the construction of the joint, the pipe is laid by two men, one holding the spigot end of the pipe in a U-shaped sling consisting of two strands of jute at the end of the pipe, while the other man pushes the pipe home from the bell end. After the pipe is home, the front man wraps the oakum over the pipe and pushes the oakum in place with a calking iron so as to provide proper space for the bitumen, while the back man tests the pipe for elevation with a grade rod from the line above, and checks for line by a plumb-bob from the same line and makes such adjustments as necessary. He then moves forward, checks the subgrade for elevation, and excavates for the bell and a length 4 inches longer than the circumference of the last pipe laid, and sees that it is free of water. The next pipe is then handed down into the ditch and laid as before. The top man, before handing the pipe down, ties on the bell end of each pipe a piece of muslin having a width 6 inches greater than that of the bell, and a length 4 inches longer than the circumference of the bell. This cloth has been torn to provide tie strings on each of the four corners.

Another man follows behind and places around each bell a runner fastened with a clamp at the top. Into this runner mouth he then pours the hot bituminous sewer joint compound, being careful to keep the runner completely filled at the top, and sees that there is no leak at the bottom or sides. When cold, the runner is removed and the muslin band is pulled out under the joint and completely filled with a 1:2 cement-sand mortar to form a 45-degree fillet around the outside of the bituminous joint. The mortar is pushed under the pipe to fill the band, and the band is then pulled tightly up and tied with the two remaining strings across the top of the pipe. The joint man then encircles the pipe with his hands and makes sure that the muslin band is completely packed with mortar, especially at the bottom, and that the band is tight and not hanging like a loose bandage. He then draws his hands upward, pressing the joint and dresses the top. Of course the mortar must be fairly stiff. Contractors are enthusiastic over this type of joint after their men get the swing of it, as it makes a good joint. The men know it; the inspector can check it; the contractor can see it and knows that his future chances of infiltration trouble are ended.

The joint itself is correct. The oakum prevents the bitumen from getting into the pipe. The runner forms a tight channel for the bitumen, which fills the annular space, adheres to the pipe surface and forms a tight joint. The bitumen can be inspected readily when the runner is removed. The cement collar reinforces the bitumen and provides maximum reinforcement where there is the greatest chance of a slip in the bituminous joint, namely, at the bottom. If by accident there should be a poorly poured bitumen joint, the tightly packed cement mortar fillet will be forced into the hole, and the rag will hold it there while the mortar hardens.

Sewer Reconstruction

THE reconstruction of the Exterior Street sewer in Bronx Borough, New York City, for a distance of 600 feet was made necessary in 1937 by the failure of the old brick twin sewer built on wood piles. The new work, done as a WPA project, consists of two concrete barrels each 12 feet wide by 8 feet high carried on Bethlehem steel tubular piles with ⅜-inch walls driven to refusal, as deep as 60 feet, and filled with concrete.

During construction it was necessary to divert the flow of sewage through a flume. The site of this job was the bed of the old Harlem River before the advent of the Harlem Ship Canal. Water was kept down by a number of pumps, including a 6-inch centrifugal which operated 24 hours a day. Backfilling was done early in 1938, and eventually a permanent pavement will be placed over the sewer.

Activated Sludge Plant Approaches Completion

THE Southwest sewage-treatment plant of the Sanitary District of Chicago, now nearing completion, is by far the world's largest of this type. The design capacity is 400,000,000 gallons a day, equivalent to a contributing population of 1,250,000 persons. In addition, this plant will receive for treatment the industrial wastes from stockyards and Packing Town, equivalent to an additional 1,000,000 contributing population.

The accompanying illustration shows the aeration tanks flanked by thirty-two Dorr Sifeed clarifiers, installed in concrete tanks 125 feet in diameter. The sludge is to be disposed of by drying or incineration, using the C-E Raymond system. The incinerators are designed to handle 100 tons of filter cake per hour, or 375 tons of dry solids per day, and to generate, as a by-product, 100,000 pounds of steam per hour.

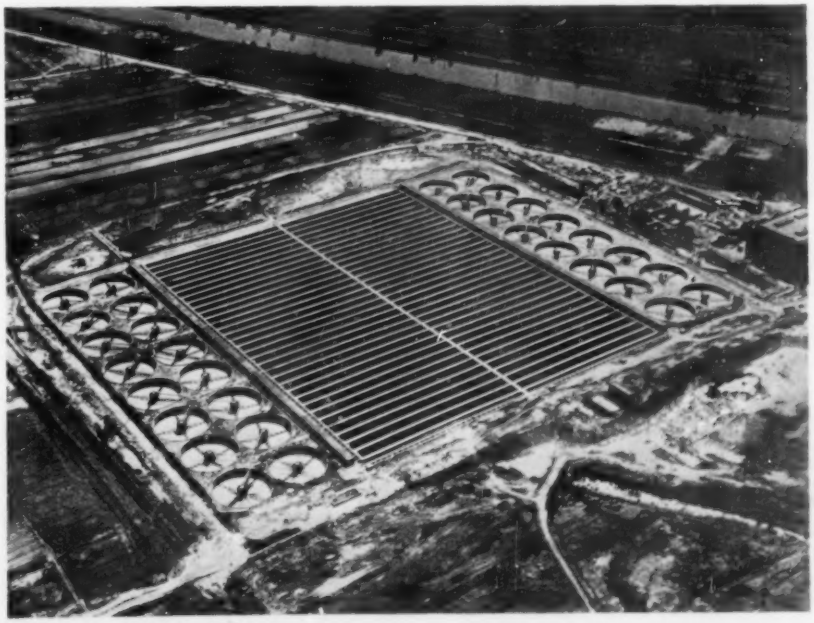


Photo by Fairchild Aerial Surveys

THE LARGEST SEWAGE-TREATMENT PLANT IN THE WORLD—THE SOUTHWEST PLANT OF THE SANITARY DISTRICT OF CHICAGO

Tax saver

SPEED MAINTAINER KEEPS PLAYGROUNDS, UNPAVED STREETS, PARK ROADS, ETC., SMOOTH . . . PRICE 1/3 COST OF LARGER MOTOR GRADERS . . . BURNS BUT GALLON OF GAS HOURLY . . . ONE-MAN OPERATION

Smooth Playgrounds—Denver finds the Speed Maintainer a quick, economical way to keep school playgrounds smooth.

Here's a year 'round tax saver — the Allis-Chalmers Speed Maintainer. It takes the place of blades costing 2 to 4 times more on such jobs as maintaining unpaved streets, alleys and park roads . . . smoothing playgrounds and airport runways . . . light landscaping work. Can be fitted with snow plow for snow removal. Does work impossible with larger outfits because drawbar is always free for pulling slips or tumble bugs, garbage trailers, tree-spraying rigs, etc. Fast-moving, it travels from one job to the next at 9 or more miles per hour . . . works at speeds of 3½ to 4¾ miles per hour. Fuel consumption is only 1 gallon of gas hourly. One-man operation frees extra man for other work. Regardless of your appropriation or scale of operations, you have work which the Speed Maintainer can do at lower cost than any other method. Ask your nearest Allis-Chalmers dealer to demonstrate this tax saver.

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.. IT DOESN'T COST .. *it Pays!*

Snow Removal and Street Cleaning

Watch Your Manholes!

A STORY which has just come to our attention is particularly timely at this season of the year, when many cities in the North are planning the disposal of snow through street manholes. Washington, D. C., does not have frequent heavy snowstorms, but the street, water and sewer departments are organized on an emergency basis so that when a heavy snowfall does occur they each assume their responsibility and snow is quickly removed from the city streets by loading into city-owned and hired trucks and dumped at specified manholes.

In January, 1935, an unusually heavy snowstorm occurred in Washington which taxed the organizations to the limit. At one manhole located five or six feet from the curb there was a lull, and the men, who had been on duty for many hours, were resting close by. Before they realized it, a large coal truck backed up to the manhole, unlimbered its chute, and dumped its entire load down the manhole.

Watch your manholes!

A NO. 10 DIESEL AUTO PATROL OWNED BY THE HIGHWAY DEPARTMENT, RANDOLPH, MASS., OPENING THE ROAD TO ITS GRAVEL PIT

Snow Handling in Portland, Maine

BECAUSE of the tremendous growth in automobile traffic during the last few years, the snow-removal problem has become one of the major items of service to the public. Of a total of about 170 miles of streets in Portland, Maine, from which it has become necessary to remove the snow, about 164 miles are cleared by plowing, leaving the snow piled at the edges of the roadway. The snow on the remaining 6 miles of streets, which comprise the most compact section of the city, is hauled away.

Another problem which increased automobile traffic has brought to the front is the sanding of icy roadways and, while experiments have been made in Portland with mechanical spreaders, it has been found there that spreading the sand by hand from trucks has proved more satisfactory.

It is the responsibility of the Portland property owner to see that the sidewalk adjoining his property is properly sanded when necessary; and in order that he may have sand available for this purpose, the Department of Public Works will, upon application, deliver to him without charge the necessary amount of sand. The records of the Department show that over 2,000 orders for sand, amounting to approximately 900 cubic yards, equivalent to about 300 truckloads, were delivered for this purpose during 1937.

As compared with a total expense of $82,863.82 in 1936, the cost of removing snow and ice and sanding streets and sidewalks for 1937 was $25,665.07.

Civil Service Lists for Street Cleaners

THE use of civil service examinations to recruit street cleaning personnel in 31 cities has been reported by a committee of the American Public Works Association in its volume, "Street Cleaning Practices," which analyzes the street cleaning organization and methods of 94 cities. The report shows that 26 of the 94 cities choose their entire street cleaning force by civil service, and five use competitive examinations to select part of their staffs. Among the larger cities using civil service in their street departments are: Buffalo, N. Y., Chicago, Ill., Cincinnati, Ohio, Los Angeles, Calif., Milwaukee, Wis., Minneapolis, Minn., New York City, Philadelphia, Pa., St. Paul, Minn., and Washington, D. C.

Although the study declares that "no best method of organization can be applied indiscriminately to all street cleaning units," it sets forth general principles of organization.

Among the principles of organization listed by the committee are: clear and definite lines of authority and responsibility so that each employee may understand the duties he must perform; and sufficient supervisory work connected with each officer's position to provide full-time occupation, but not so much as to preclude opportunity for planning and appraisal of the work. Another principle included declares that "when the kinds of work which must be performed vary widely as to skill, knowledge and methods, the arrangement of parts of an organization should be made so as to group together those jobs which require similar abilities and methods."

A NEW ETNYRE FLUSHER MOUNTED ON AN INTERNATIONAL DR60 CHASSIS RECENTLY PURCHASED BY THE CITY OF SAN FRANCISCO, CALIF., SHOWN IN FRONT OF THE CITY HALL

Relief Worker Turns Good Samaritan

FINDING the street on which he lived in need of a good sweeping, Mudianna Asto, a relief recipient of Aliquippa, Pa., started out to sweep it. He found that the effort made him "feel good inside" and caused the bread purchased with his relief money to "taste sweet," so he continued to spend an average of six hours daily cleaning the streets in his neighborhood.

—From *The Street Cleaner.*

Do not the immense property values represented in this picture warrant the best fire protection that money can buy? ——

Three-Fold Fire Alarm Box on Type U1000-6 Pedestal

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The GAMEWELL

Three-Fold Fire Alarm System

protects the wealth of the community and safeguards human life. It is a permanent investment in public safety and in the conservation of community resources represents true municipal economy. The Three-Fold System will reliably transmit alarms of fire under disordered circuit conditions when other types of systems would fail.

Make the Three-Fold Fire Alarm System your city's "first line of defense against Fire!"

THE GAMEWELL COMPANY, NEWTON UPPER FALLS, MASS.

Why not remember to mention THE AMERICAN CITY?

Public Safety

100 *Cities Use Parking Meters*

APPROXIMATELY 100 cities are using parking meters to control traffic congestion in their business districts, the International City Managers' Association reports. Among cities recently authorizing installations were Cleveland, Youngstown and Zanesville, Ohio; Duluth, Minn.; Geneva, Glens Falls, Newburgh, White Plains and Buffalo, N. Y.; Hackensack, N. J.; Sioux City, Iowa; and Petersburg and Roanoke, Va.

Most of the cities charge a nickel for an hour's parking. In Auburn, N. Y., however, the meters receive pennies instead of nickels. Any number of pennies up to five may be inserted at one time, each penny entitling the motorist to park for twelve minutes.

Parking meters have been in court on the matter of legality eight times. They have been upheld in Oklahoma, California, Florida, Massachusetts and Texas. Alabama courts declared them illegal in two cases. A New York State law passed in 1937 permitted meters to be used anywhere in the state except in New York City, all income to be used for traffic control.

Do You Want Fewer City Employee Accidents?

TO MANY, an accident is merely a broken bone, a cut, a burn, or a fracture; but municipalities are annually spending millions of dollars because of unnecessary accidents to employees. A city, to realize the best results in accident prevention, should conduct a definitely organized program following these principles:

(a) Interest and support of the chief executive.

(b) Fact-finding to determine accident-producing conditions.

(c) Selection and application of proper remedies.

(d) Enforcement of methods of correction.

Any city government wishing to reduce unnecessary expenditures arising from accidents to its employees is invited to communicate with Edward R. Granniss, National Safety Council, Chicago, Ill.

AUBURN'S LATEST—750-GALLON PUMPER WITH WINDSHIELD

New Pumpers at Auburn, Maine

THE accompanying photograph shows one of two 750-gallon triple pumping engines which the Ahrens-Fox Fire Engine Co. delivered in September, 1938. This gives us five pumpers, with one in service since 1923, and a ladder truck ten years old.

I do not favor the entirely closed apparatus, but know that the cab style is excellent for outside runs. Our city covers 65.3 square miles, and has 351 miles of streets. Our latest design of pumper is equipped with windshield.

We use every occasion to talk on fire prevention and what to do in case of fire. During Fire Prevention Week we mount a fire-alarm box on a board in front of its station and demonstrate its effective use. Twelve more boxes will give us a reasonably complete Gamewell fire-alarm system.

Our personnel consists of 21 permanent men and a call force of 34 men. We work on the one-day-off-in-five basis.

HARRY E. FOGG,
Fire Chief, Auburn, Maine.

Knoxville Quadruples Its Police Cars

ELEVEN of 18 new Ford de luxe coaches purchased recently will be used as cruiser cars by our patrol division, and seven of them will be used in the traffic department. In addition to these 18 cars, we have six used for the same purposes.

The new cars are leather-upholstered throughout. All our cars are equipped with radio, siren, heater and large generators. Five of the six older cars are Chevrolets, and one a Plymouth, all approximately 2½ to 3 years old.

In addition to these police cars, we have four three-wheel Harley-Davidson motorcycles equipped with siren and radio, and used for checking parking in the business district.

O. T. ROEHL,
Director Public Safety, Knoxville, Tenn.

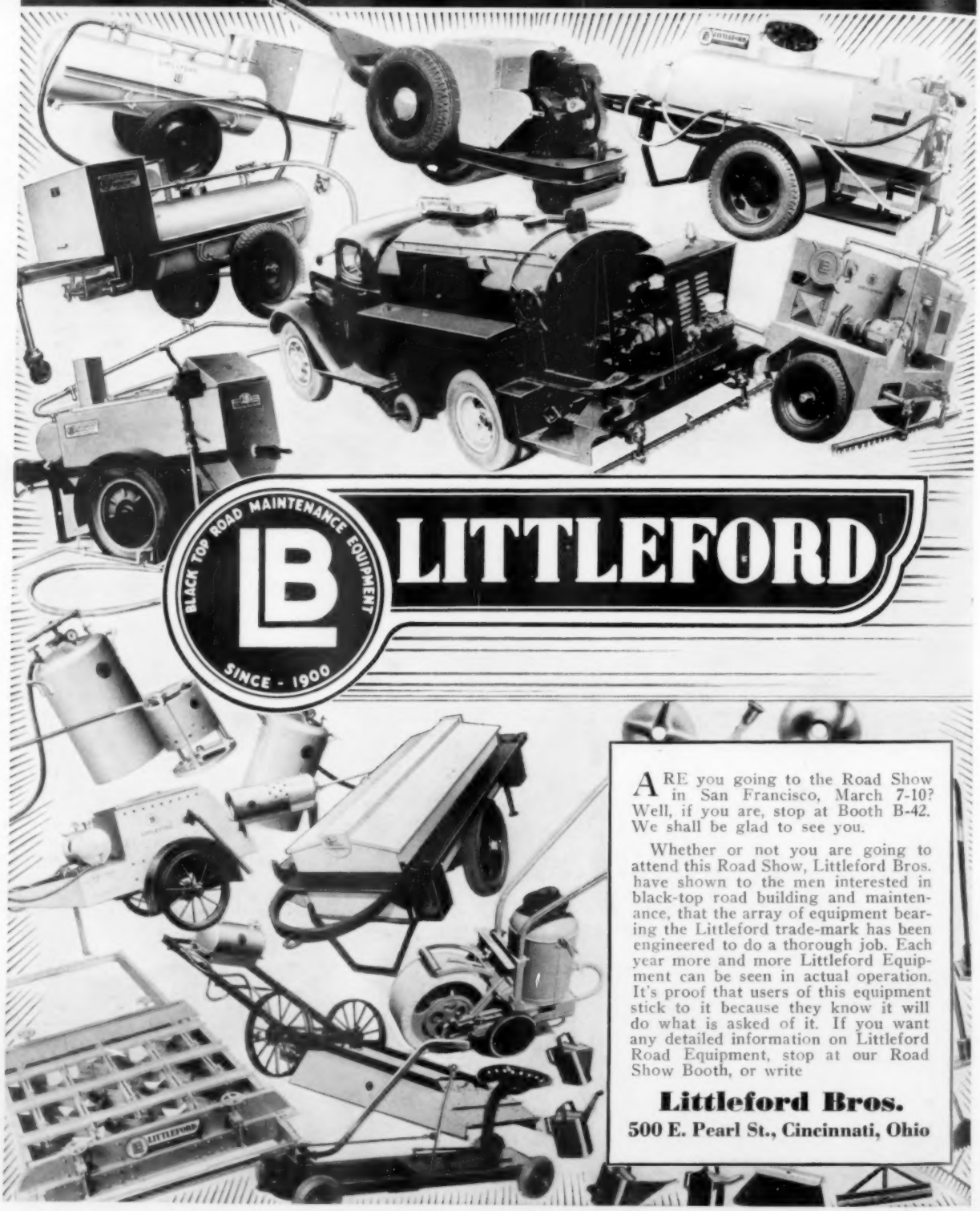
Testing Brakes with Milk Bottles

MANY cities and states now have periodic safety inspection for automobiles, and a large percentage of the cars tested fail to pass the brake test. In an effort to reduce the number of failures on this test, the Kansas City, Mo., Safety Council, as reported by the International Association of Chiefs of Police, conducted tests to find a means by which motorists could check their brakes *before* appearing at the inspection station.

The most practical test developed requires no more elaborate equipment than a quart milk bottle. The instructions are: pour a pint of water into a quart bottle, cap the bottle and set it upright on the floor of the car. Drive the car at 20 miles an hour and apply the brakes. If the bottle does not upset, the brakes will not pass official inspection.

KNOXVILLE ADDS THESE 18 FORD DE LUXE COACHES TO TRAFFIC AND PATROL FLEET

"LITTLEFORD" will be at the ROAD SHOW



ARE you going to the Road Show in San Francisco, March 7-10? Well, if you are, stop at Booth B-42. We shall be glad to see you.

Whether or not you are going to attend this Road Show, Littleford Bros. have shown to the men interested in black-top road building and maintenance, that the array of equipment bearing the Littleford trade-mark has been engineered to do a thorough job. Each year more and more Littleford Equipment can be seen in actual operation. It's proof that users of this equipment stick to it because they know it will do what is asked of it. If you want any detailed information on Littleford Road Equipment, stop at our Road Show Booth, or write

Littleford Bros.
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FEBRUARY, 1939

Vol. LIV, No. 2

The American City

470 Fourth Avenue
New York

35 Cents, $2 a Year

Asphalt Pavement Resurfacing by the Surface Heater Method

By DEAN G. EDWARDS
Consulting Engineer, Office of the Borough President of Manhattan, New York City

FOR twenty years the borough of Manhattan, one of the five boroughs composing New York City, has been using the surface heater method for repairing some of the asphalt and asphalt block street surfaces. About 300,000 square yards are repaired in this manner between the middle of May and December 15 of each year.

Annual Survey

The Maintenance Division of the Chief Engineer's Office keeps a card record of all paved streets. After the last snow of the spring has disappeared, the Maintenance Staff makes an inspection of every paved street in the borough. From the information obtained and the accumulated data on the record cards, the Superintendent prepares his program of surface repairs and makes his recommendation to the Chief Engineer.

The decision to resurface is based upon a formula including the items of age of pavement, kind and condition of base, condition of curb, general appearance of street, and amount of traffic. Most of the pavement scheduled for resurfacing is at least fifteen years old. The traffic item is very important, particularly in localities where any interruption of traffic is almost a calamity.

A street being repaved by the heater method is closed about twelve hours, the work being completed in one day. Such a short period of closure is appreciated by business firms, bus companies and the traffic division of the Police Department.

When the schedule of streets to be resurfaced has been tabulated, it is divided into three groups, and each group is again divided into a summer schedule and a fall schedule. The summer schedule, about 60 per cent of the total, is completed before the middle of August, and the rest before December 15.

Preparation

Three gangs cover the work of the borough. One of the gangs begins at the north end of the borough, another at

EQUITABLE SURFACE HEATER WORKING ON RIVERSIDE DRIVE NORTH OF 191ST STREET, NEW YORK

SPREAD CREW OF THE ASPHALT GANG WORKING ON RIVERSIDE DRIVE, NEW YORK

the south end, and the third gang in the middle of the borough. The program is so prepared that, without any unnecessary skipping about, the gangs work generally toward the asphalt plant which is located at 91st Street and East River. The schedule is printed and gives the streets to be resurfaced, the limits of the work, and the yardage and approximate date of beginning and ending of each job.

About 90 per cent of the streets have to be recurbed. This work is started in three locations and must precede the work of the asphalt gangs.

Copies of the schedules are sent to all companies having underground structures, and they are requested to complete any work contemplated within these streets before the date of the pavement repairs, and to be prepared to adjust their surface castings to conform to the established street grades. Similarly, the Department of Water Supply, Gas and Electricity is given the schedules and is requested to inform the Chief Engineer if any extensive repairs or new installations are planned in any of the streets designated.

The Sewer Bureau, which operates under the direction of the Chief Engineer, is furnished with a schedule and makes an examination of all its structures. As the work progresses, the Sewer Bureau supplies a bricklayer and four laborers to reset or renew all city-owned castings, such as sewer castings, water castings, and castings of the city-owned subway.

The Division of Permits is requested not to issue permits which would interfere with the resurfacing work.

Resurfacing by Heater Method

The surface heating machines are not the property of the city but are hired on a square-yard basis by contract after advertising for bids. Specifications require that the heater flame shall not come in direct contact with the pavement but shall develop sufficient heat to melt the asphalt without burning it. This is very desirable in order to prevent smoke nuisance caused by burning bitumen. Machines must be mounted on power trucks and have a heating hood 8 feet square, which can be raised or lowered by a hydraulic hoist. All operating parts, including the air blower, hoist and pumps, must be provided with friction clutches, and with valves so located that the machine may be operated by one man.

Competition for furnishing these machines has been keen. The present price is 6¾ cents per square yard for the use of the machine, including keeping it in working condition. The contract for 1938 was awarded to the Equitable Asphalt Maintenance Co., of Kansas City, Mo.

Fuel oil is purchased by contract. Number 4 oil, averaging 4 cents per gallon, has been found the most economical. It is delivered in 500-gallon shipments to the job and loaded into portable oil wagons, which are a part of each gang's equipment. Oil consumption is about 100 gallons per day per machine.

Resurfacing Crews

A complete gang has about 33 men. Because of the necessary staggering of the hours of work, each gang has two foremen, one of whom ranks as assistant. The first section, or the preparatory gang, has 10 men in addition to the foremen. The second section, or the laying gang, has 21 men.

The preparatory gang comprises one compressor operator, two paving breaker operators, one truck driver, and about six laborers. The equipment of this section consists of a portable air compressor which operates two paving breakers, one dump-truck, one surface heater, and various small tools.

The laying gang includes four rakers, two tampers, one smoother, two roller engineers, and about twelve laborers. The equipment of this section consists of two tandem rollers, one 8-ton for initial rolling and one 12-ton for finishing, and various small tools.

Method

In business districts the preparatory gang begins work at 6 A.M.; in residential districts an hour later. This gang breaks and removes the pavement along the curb and around all iron castings for a foot in width. The débris is removed in advance of the surface heater. Following the heater, three laborers remove the heated surface of the old asphalt to a depth up to 1 inch by scraping with specially made rakes. The exact depth of the old asphalt removed depends on its condition.

The second section, or laying gang, begins work after several hundred square yards have been prepared and while the heated surface is still warm enough to insure a bond. Where the old pavement has been cut out along the curb and around castings, and in other places where there are depressions over 1½ inches in depth, a coarse mixture, or binder course, is used to bring the pavement to 1 inch below finished grade. Thereafter, the asphalt wearing surface is applied as elsewhere.

The hot asphalt mixture for the wearing surface is heated to a temperature of 325° F. and applied and rolled in the same way that is customary in newly paved streets. The use of portland cement or other coloring material was discontinued in Manhattan several years ago.

Costs

The labor cost of one gang is about $250 for an 8-hour day, and the average area repaved in a day is about 1,000

square yards. The total cost of labor, transportation and materials averages about $1 per square yard for a full season's work, of which the cost of materials is about 35 cents per square yard. Many jobs under favorable conditions have been done for 83 to 89 cents per square yard. The fact that Manhattan has many streets in good condition today which were treated by this method ten to fifteen years ago shows that this type of pavement repairing is a sound investment.

The New York City Charter provides that the Borough President has control of paving, repaving, resurfacing and repairing of streets. The Maintenance Division, which has immediate charge of resurfacing, operates under the direction of the Borough President's Commissioner of Borough Works. Walter D. Binger is Commissioner of Borough Works, and Lester C. Hammond is Chief Engineer. Charles W. Williams, Assistant Commissioner of Borough Works, and C. J. G. Doherty, Superintendent of the Maintenance Division, have charge of asphalt pavement repairs in the borough.

San Francisco Pick-up Trucks with Metal Top Construction

Design Revised to Prevent Rubbish from Blowing Off in High Winds

BECAUSE of the strong prevailing winds in San Francisco during certain seasons of the year, it is absolutely necessary to use some method for keeping the paper and refuse picked up from the city streets from blowing off the street-cleaning pick-up trucks and being scattered over the streets. The late Peter Owen solved this problem many years ago by designing and building metal tops for all the pick-up trucks. These effectively kept the refuse, dirt and papers from blowing off into the streets.

Recently when two new General Motors and three Mack trucks were purchased by the San Francisco Bureau of Streets for use in this pick-up service in the downtown section of the city, the present Superintendent of the Bureau of Streets, Preston M. King, designed special metal tops and special metal dump bodies for the trucks, based on the original conception, to which had been added many innovations. The metal bodies were built by the Wood Hydraulic Hoist & Body Co. from Mr. King's designs and consist of Gar Wood all-steel refuse bodies mounted on a slant type underbody cam and roller hoist. Each truck has a capacity of 9 cubic yards and a dumping angle of 50 degrees. The complete dumping operation requires only 9 to 11 seconds. The trucks are equipped with Seiberling tires and have a wheelbase of 160 inches.

The Metal Top

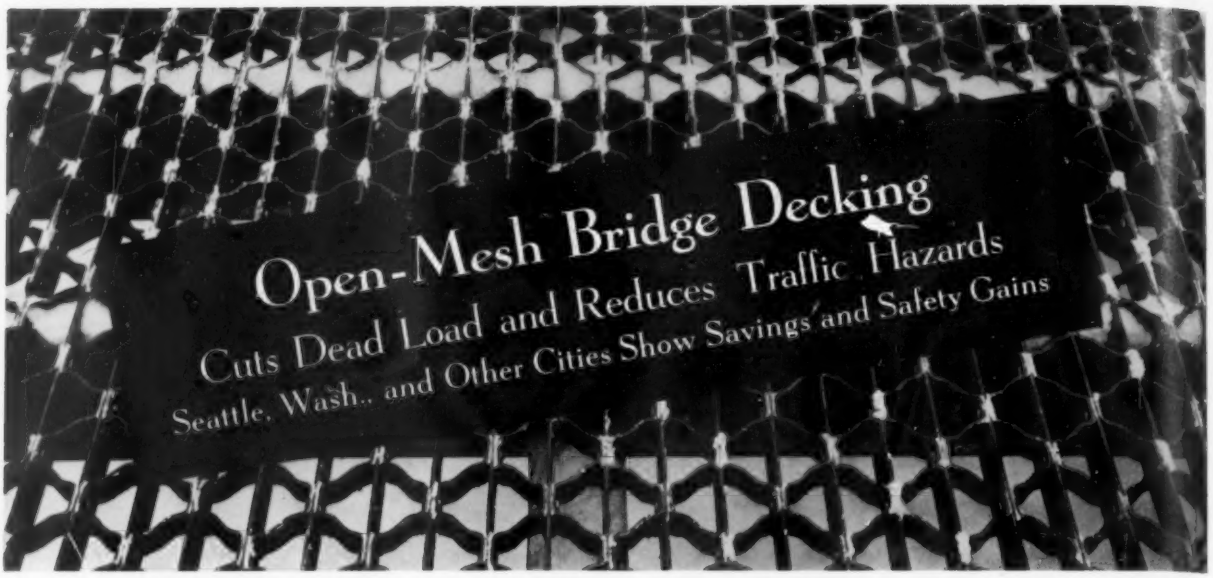
The original metal top was equipped with three sliding doors on each side, where boxes of refuse were dumped into the body. The new tops have but two sliding doors, one at the center and one at the front of the body, the doors being built in the form of a semi-circle. The sliding doors are kept closed at all times, except when the contents of the refuse receptacles are being dumped into the body. Then, the sliding doors are raised, presenting an opening 3 feet 6 inches long and 2 feet 6 inches high through which the contents of the refuse cans are easily and quickly dumped. After a considerable number of the refuse cans have been emptied into the body, the entire body is raised, causing the refuse and paper to slide down to the rear. This is repeated, packing the waste material in the back of the body until it has reached its maximum capacity of 9 yards.

The truck body is 7 feet wide and 11 feet long and is equipped with a specially designed tailgate. The loaded trucks are driven to the 16th Street plant, where garbage is loaded onto Southern Pacific Railroad cars for fill and cover disposal methods. The trucks loaded with the street refuse are driven up an incline to the overhead platform, and the refuse is dumped from the bodies into the railroad cars spotted on both sides of the platform. Each of the trucks operating in the downtown section averages 900 miles monthly.

To facilitate the loading of the trucks, there is a very low running-board, only 10 inches above the street, on each side of the cab, upon which one of the truck crew rides from one refuse can to the next. This very low running-board makes it possible for the two helpers to easily and quickly step onto the truck and off. Almost before the pick-up truck has stopped opposite a refuse can, the man riding on the running-board has stepped off and, followed by the second helper, picks up the box of refuse and walks over to the truck, raises the box to the side of the truck body and dumps it through the openings. Then one helper closes the doors of the body while the other returns the empty can to its place on the sidewalk and quickly boards the truck. One helper rides on the seat with the truck driver, thus enabling one man to obtain some rest during the collection period. The two helpers change places frequently.

Previous to the placing of the new GMC trucks in operation the pick-up trucks were able to make the rounds of the downtown streets every two days. As a result of the greatly increased capacity of the new trucks, obviating the long haul, all refuse cans are visited daily and their contents removed. Each pick-up truck covers an average of 35 miles daily and dumps as many as 220 refuse cans. The increased capacity of the trucks saves two trips daily to the dumping bunkers.

MUNICIPAL OFFICIALS SECTION
AMERICAN ROAD BUILDERS' ASSOCIATION
MEETS IN SAN FRANCISCO
MARCH 7-10, 1939



Open-Mesh Bridge Decking

Cuts Dead Load and Reduces Traffic Hazards

Seattle, Wash., and Other Cities Show Savings and Safety Gains

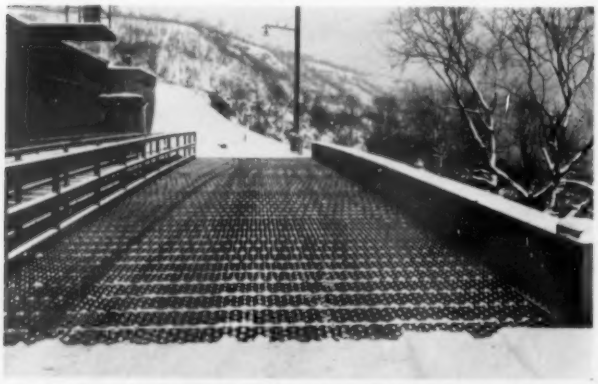
A REALIZATION of new potentialities in the design of bridge decking is becoming increasingly apparent in many recently completed structures as well as in the remodeling of older bridges. While continued progress has been made during the past century in the efficiency and appearance of the supporting members of bridges, relatively little has been done until recently in improving the principal dead-weight portion, which is the flooring. This is in spite of the fact that the traffic-bearing portion of a bridge is the part that comes to the most immediate attention of the general public.

From a purely engineering standpoint, bridge decking over the minimum weight possible for the desired strength might be considered as non-paying load. The more it weighs, the less the bridge can carry for a given strength of its structural members.

From a public standpoint, a bridge decking offers a safe continuation of a highway or street if it is a good deck, or a dangerous traffic hazard if it is a poor deck.

Reducing Dead Weight of Old Bridges

The increasing weight of modern traffic has forced the rebuilding or replacement of decking on many old bridges. In numerous cases, the replacement of an old deck with one of lighter materials has eliminated enough dead weight to make it possible for the original structural members to bear a heavier load. This frequently has been accompanied by a reduction in accident hazards.



IN BAD WEATHER MOTORISTS APPRECIATE THE NON-SKID FEATURES OF THIS TYPE OF BRIDGE DECK

Open-mesh steel bridge decking is being applied to the reduction of dead weight and the removal of traffic dangers, such as skidding, to a constantly widening extent. Decking of this type, such as Blaw-Knox Irving decking, consists of a grid of main longitudinal straight members with bent transverse secondary members which form a mesh small enough to provide a safe driving and walking surface, but large enough to be unable to catch horseshoe calks, small heels, or narrow bicycle tires.

Aside from its reduction in weight over the older types of surfaces, it provides a virtually non-skid pavement which cannot accumulate water, ice, or snow. First applied to the University Bridge at Seattle, Wash., in 1933, each year has shown an increasing number of installations. Maintenance has been found to be negligible, and to consist only of spray painting, usually at the same intervals that the remainder of the bridge is painted.

Traffic Accidents Reduced

In cases where older types of slippery deckings have been replaced, a sharp reduction, and in some cases almost complete elimination, of traffic accidents has resulted. The Seattle installation was followed by a marked reduction in the number of accidents. City officials state that they have no record of any accidents due to skidding on the open-mesh bridge decking. The approaches were not fitted with the decking. Complete accident statistics covering both the bridge and the approach, as shown by the following table, present an impressive picture of the safety factor:

ACCIDENTS ON UNIVERSITY BRIDGE AND APPROACHES

Year	Total Accidents	Injury Accidents	Fatal Accidents
1929 Old structure	111	2	1
1930 " "	178	0	0
1931 " "	190	12	1
1932 " "	42	3	0
1932 Temporary structure	112	4	0
1933 " "	59	2	0
1933 New structure	10	2	0
1934 " "	19	3	0
1935 " "	12	2	0

Year	Total Accidents	Injury Accidents	Fatal Accidents
1936 New Structure	23	2	0
1937 " "	21	2	0

Advantages on Bascules

On bascule bridges the saving in weight has been accompanied by a reduction in wind resistance, which is an important factor when the spans are opened. About 90 per cent of the power and machinery strength in such bridges is required to overcome wind resistance, only 10 per cent usually being needed for actual lifting. The new type of decking makes a conservative reduction of wind resistance to about one-half, with a power economy lasting for the life of the bridge.

The elimination of the accumulation of snow also has removed an operating problem from this type of bridge. The University Bridge at Seattle was the only one of five bascule bridges over the same waterway able to operate following a fall of 6 inches of wet snow in January, 1935.

Other Outstanding Uses

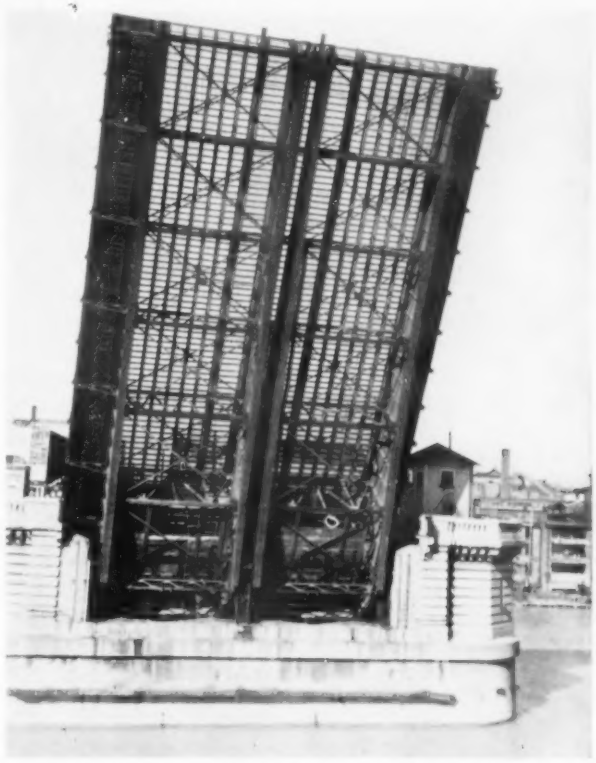
One of the largest installations of open-mesh bridge decking was on the Marine Parkway Bridge on Long Island, N. Y. A saving in weight was of particular importance on this installation owing to the fact that it is a vertical lift bridge.

The public reaction to the new type of decking has been invariably favorable. One of the recent installations was at Oil City, Pa., where the three-span State Street bridge was redecked following redecking in 1937 of the smaller White bridge.

A consideration in the replacement of a bridge at Apollo, Pa., washed out by the flood of 1936, was the fact that the open-mesh decking would not create buoyancy as did the decking of the former bridge.

The speed with which the decking can be installed has been a factor in many replacement jobs. Shipped in standard sections from the shop with special sections to meet individual requirements, the units are spliced by cold riveting with a special tool, lent by the manufacturer, and are welded to the bridge supports.

Further applications of open-mesh bridge decking may have the effect of drawing increasing attention to the possibilities of making bridges safer than ordinary highways and streets rather than an increased hazard as is often the case at present.



THE CHERRY STREET BASCULE BRIDGE, TOLEDO, OHIO, WHERE OPEN-MESH BRIDGE DECKING REDUCED THE WIND RESISTANCE

Municipal Budgets and Assessed Values

CALLING attention to the fact that "an upturn of business conditions will not bring back the old assessed values, because they were highly fictitious," the Detroit Bureau of Governmental Research, in a recent bulletin presents the following tabulation of the trend in assessed values in that city:

TREND OF ASSESSED VALUES—DETROIT*
(IN MILLION DOLLARS)

Year	Land	Buildings	Personal	Total
1938	$ 716	$1,142	$608	$2,467
1936	717	1,070	404	2,292
1934	738	1,061	452	2,251
1932	949	1,176	523	2,648
1930	1,474	1,611	689	3,775
1928	1,487	1,447	629	3,562
1926	1,357	1,215	588	3,160
1924	1,014	902	539	2,455
1922	792	698	464	1,954
1920	658	583	458	1,699

* For brevity, the assessments are shown biennially, although the assessments are made annually. The actual assessment for 1938 is $2,466,928,943.

What does this mean? The Detroit Bureau answers, in part:

"The decrease in assessed values occurred with a change in the trend of population; it was a coincidence that the depression occurred at practically the same time. The rapid increase in population gave rise to a speculative realty market of 'boom town' proportions in which values were only limited by the imagination. There is considerable evidence that this 'boom' passed shortly after 1925, but the passing was not immediately reflected in decreased assessed values, principally because higher assessments were demanded so the bonding limit of the city would permit public improvements to be financed by borrowing, not by taxes.

"There is a serious question whether true property values in Detroit ever warranted the peak of $3,775 million assessment in 1930, although the expenditure level was keyed to this scale. At the present rate of growth, there is scant hope that Detroit will be able for years to come to reach the former peak in assessments. Certainly present population trends give little encouragement. Property is now assessed at such a high ratio of true value, that no further increment can be secured at present. There is some hope that personal property assessment may increase slightly with revival of the security markets, but this would be only a relatively small factor.

"However, most important is that the present decreased assessments are not a depression-imposed condition but rather the result of the elimination of the speculative factor in the real estate market."

Property-Life Insurance as Preventive of Future Blight and Slums

By HANS HEYMANN, PH.D.

The following brief article comprises part of the author's introductory statement in his book on "Property-Life Insurance," published last month by Harper & Brothers and reviewed on page 97 of this issue of The American City.

WHEREAS we are accustomed to replace human earning capacity with insurance and to restore the earning capacity of physical objects which have been impaired, we have failed so far to concede that physical objects may "die" just as surely as human beings. So, while we have provided for the restoration of such objects which have been damaged through accidents of all kinds, we have, on the whole, neglected to provide for their replacement when they have reached the point where they have no real, economic justification.

That a technique not unlike insurance on human life can be applied to structures and objects cannot be denied by the thoughtful person. It is only a question of the method by which it shall be applied.

Through Property-Life Insurance a genuine actuarial technique, somewhat similar to that of life insurance, is introduced into the property-insurance system for the first time. Actuarial tables have been devised based upon experience-data covering not only the probable life of the structures, machinery and other physical objects but also the probable frequency of damages from depreciation which are to be anticipated. But Property-Life Insurance is by no means life insurance. By law and by its own nature *Property-Life Insurance is pure property and pure risk insurance in all its characteristics, and has a technique of its own.*

Property-Life Insurance, then, insures the life of physical property as life insurance insures the life of man. The property to be insured must first undergo a physical examination, and if it is found to be in a normally sound contion it is considered a risk eligible for this kind of insurance.

The second step is an approximate estimate of the life-expectancy of such property. Once a "life-term" is established and the property graded in the proper risk class, the "insurable amount" (which must equal the value of the property, without the ground), then the corresponding annual premium can be fixed. While over-insurance is prohibited by law, under-insurance is undesirable because it provides partial coverage only.

During the insured life-term, *all vitally important repairs are covered* (partial, premature losses). *The death of the property occurs when the means necessary to carry out the repairs equal, or exceed, the cost of building a new property. The property is, then, not worth repair, and has ended its useful life-span.* In cases such as this, the insured amount must be paid out at any time prior to the maturity of the policy. . . .

The significance of Property-Life Insurance is of the utmost importance to all classes of society, not only to the insurance fraternity, but to owners, mortgagees, the building industry, and the community at large. *Money lenders* will enjoy the advantage of a new collateral which can be assigned to them with all rights and benefits. *Industrialists* will be able to transform parts of their surplus and renewal reserves into a genuine factory and machinery depreciation insurance. This industrial-risk insurance will grant them at all times, in ready cash, the means necessary to maintain their plants and machinery in a proper state of repair and in up-to-date and efficient working condition. The premiums of Property-Life Insurance constitute an overhead expense.

For *the community* at large, Property-Life Insurance represents an economic philosophy already subscribed to through the use of other types of insurance—a philosophy which means in essence the retention, rather than the dissipation, of earning power of invested capital.

Only on the basis of the securities which this insurance system provides, *the Federal authorities* will be justified in taking over vast amounts of guarantees for productive public purposes, without running the risk of having to take over eventually millions of exhausted, obsolete or dilapidated properties.

Slums and blighted areas will disappear from our cities once this rational system is generally introduced into our national economy.

One illustration will serve to clarify this social implication: Our cities today contain slums which consist largely of dwellings which in the true sense of the word experienced complete depreciation many years ago. Had Property-Life Insurance been available and commonly utilized when these structures were first built, sums would have been available to replace them with up-to-date structures at the end of thirty, forty or fifty years, so that the areas so filled today would, instead of degrading into slums and blighted areas, have been able to keep pace with the times.

Such insurance, while obviously rational, has up to now been missing from the American scene. No legal provision had been made for it until recently when two states, New York and Illinois, provided by legislative enactment that it might be sold. Other states will follow their lead. Details of the enactment may be found in the appendix. Companies empowered to write this insurance will be started in the near future. A charter for such a company already has been granted by the state of New York.

Light Truck Serves Town Well as All-Year Working Unit

Suffield, Conn:, Has New All-Wheel-Drive Truck Working on Street Maintenance and Snow Removal

FROM the time the frost is out of the ground to late in the fall, the town of Suffield has its roads and streets under constant maintenance with its Ford truck with Marmon-Herrington all-wheel-drive and a Root spring scraper under the truck body. The town has 75 miles of gravel roads and 10 miles of dirt roads. About 12 miles of the gravel roads are oiled annually, and there is a regular program to increase the oiled mileage each year as money is available. Oiling cuts the amount of blading and regrading necessary and thereby reduces the cost of maintenance.

The All-Wheel-Drive Truck

The Ford V8 truck was purchased in December, 1936, and had been run 24,898 miles up to the end of September, 1938. A second engine has been placed in the chassis, as the continued operation in maintenance and snow-plowing at low speeds gave the old engine far more effective mileage than is shown on the speedometer. The Marmon-Herrington drive gives the truck eight forward and two reverse speeds. The speeds used most for grading operations are the 3 to 4 miles per hour range.

The Root spring scraper consists of two 4½-foot blades mounted on a circle beneath the truck and manipulated from the cab of the truck by the driver. Power for operating the two parts of the blade is supplied by a small oil pump driven by an electric motor from the battery of the truck. Two pressure gages in the cab connected with the pistons operating the two blade sections show the exact pressure being applied to the two parts of the blade. A pressure of 300 to 500 pounds is applied when the truck is doing heavy cutting with one or both sections of the blade. The blade is angled from the transverse position across the road to 40 degrees front or back. This makes it possible to blade material easily and spread as desired. When making the first cut on a road that is being reshaped, the driver of the truck sits over toward the right-hand side of the seat and uses a knob handle on the wheel to steer. This position makes it easier for him to see the type of work he is handling. When the truck was first used by the town, the driver was assisted by a second man to operate the scraper, but as soon as the driver got the "feel" of the truck he was able to handle both operations himself.

When reshaping a road, the first heavy operation is done at the lowest speed, about 2 mph, and then the material is windrowed to the sides and later worked back to the center and spread with the blade set at right angles to the line of travel of the truck. This always leaves some larger stones in the road, which most towns knock off or leave for traffic to push back into the road surface. Some towns —and Suffield used to do this—employ a man or two to follow up the grader and hand-pick or rake the stones off the road. Now it has been found that by operating the truck at 20 mph with the blade angled about 40 degrees, the larger stones can be thrown from the road when the blade is set to just skim the top surface and not cut the material.

After the gravel sections have been oiled, the truck pulls a hone over the surface to slightly mix the material and give a deeper penetration of the oil. The town still uses its Caterpillar Auto Patrol with 10-foot blade for the heaviest grading and follows through with the light truck for the maintenance.

Winter Snow-Plowing

The town equips the Ford truck with either a Good Roads blade pusher plow or a Holyoke V-type plow for winter work. It is first necessary to remove the Root scraper, since it interferes with the pusher bars of the plows. The control for the plows is hydraulic, using a Blackhawk Power Packer mounted in the cab. The plowing with the blade plow is done at 20 to 25 mph and with the V-plow at slightly slower speeds. The other equipment of the town used for snow removal includes two International trucks, which with the Ford do all the plowing in the town in one day. Formerly, with heavier truck, it was necessary to take two days to clear the roads after every storm. The all-wheel-drive on the light truck makes it first choice for the plowing of the eleven miles of mountain roads in the town. The other two trucks with Holyoke plows do the level country roads. The extra power available with the all-wheel-drive enables the light truck to operate without ballast where formerly all the larger trucks were loaded to the limit to get traction.

The road construction and maintenance program of Suffield is under the direction of James Sullivan, First Selectman.

THE LIGHT TRUCK THAT MAINTAINS THE ROADS OF THE TOWN OF SUFFIELD SUMMER AND WINTER

Covered Type Trash Cans

Their Use in a Massachusetts City of 42,000 Population

By J. M. PEIRCE
Commissioner of Public Works,

and

R. T. BARNICLE
Superintendent of Streets,
Fitchburg, Mass.

THE city of Fitchburg prides itself on the cleanliness of its streets, and does everything within reason to keep them that way. Throughout the year eight street cleaners are employed on the main streets. The remainder of the city is kept clean by using welfare labor, these forces being further augmented during the spring and fall by the entire Public Works Department forces and a rotary broom.

The majority of the streets are kept in a fairly clean condition. However, in many spots, especially around small confectionery stores near schoolhouses and playgrounds, and in the business district near newspaper and tobacco shops, it was found nearly impossible to keep the sidewalks and gutters free from litter. To overcome this difficulty the city has installed Solar-Sturges covered trash cans at various places, and their use has proved highly satisfactory. So much so, in fact, that many calls are received from various merchants, asking that cans be placed outside of or near their places of business.

IN FITCHBURG, MASS., REFUSE CANS ARE PLACED CLOSE TO SHOPS AND STORES FREQUENTED BY CHILDREN—AND THE WASTE PAPER GOES INTO THE CAN AND NOT ON THE STREET

The Cans Are Painted Yearly

These cans are made of sheet metal, 22 inches square and 48 inches high. The upper 10 inches of the can is built in the form of a wedge with a hinged opening at the top. The opening is 5½ inches at the top, 8 inches deep and 18 inches at the bottom. The cans are placed on the curb with the opening swinging parallel to the street. They are painted green, and the words REFUSE & PAPERS are painted in aluminum. The paint is renewed every year to keep the cans looking neat.

Emptying the Cans

In each can is fitted a burlap bag which is used as the refuse container. This is easily taken out and facilitates cleaning the cans. The bags are emptied at least once a week and usually contain scraps of paper, wrapping papers, newspapers, small cardboard boxes, etc., and a few empty bottles—usually liquor bottles. The bags last about two years unless they are burnt as a result of a lighted cigarette carelessly thrown into the refuse container. This happens occasionally. The cans themselves have been in use for over twelve years and are still in good condition. Only one has been out of use for any length of time, and that because it was badly damaged by an automobile.

Cooperation Helps

The merchants throughout the city like the cans and have cooperated with us by requesting their patrons to use the cans rather than litter the sidewalks. Children patronizing candy stores use the cans to deposit the wrappings, and, in one instance at least, they have been requested by their principal to throw all waste paper into the cans. In this case there is a small confectionery store in the immediate vicinity of the school, and a trash can has been placed outside the store.

The cans in the vicinity of playgrounds have proved particularly satisfactory, and during the summer months it is necessary to empty these cans every other day.

Appreciation

Although the trash cans were originally an experiment, Fitchburg has come to appreciate them. The merchants approve them; the public use them; and our street cleaners give them a friendly pat as they pass them, broom in the cart, realizing that they save them much extra labor.

Civic Pride Creates New Airport

Air-Visible Runways by Day and Night Feature Newly Completed Airport at Joplin, Mo.

By H. D. ROBARDS

WHEN the country as a whole became conscious of the possibilities offered for modern airport construction four years ago, city officials in Joplin began urging that the city bring its air facilities up to date. The city has just recently opened its new municipal airport, which is lighted for night flying.

City Votes the Money

In the background of that completed development lies the story of how the city had to be aroused to air-mindedness, and sufficiently so to vote the cash purchase of a new airport site—taking the money from a fund that its voters had long considered sacred. To do that, it was necessary to overcome the idea that the old site was all right, although it was wholly inadequate as to surface, contour, space and drainage. It was also necessary to convince the voters that, although the airport might be costly, the lack of modern facilities would be much more costly, no matter if the airport should prove to be a temporary white elephant. Business men in favor of modernity, through the Chamber of Commerce, paid the cost of the airport-purchase special election, to keep the cost to taxpayers as low as possible. And that was an important factor in the success of the issue.

However, that didn't lessen the controversial animosity that was aroused in the campaign, animosity which proved to be a boomerang for the city officials. Because the port could not be completed all at once, the public became so importunate that the officials began to believe their pet project was a very spoiled baby, indeed.

This phase developed with the construction work proper. Construction itself offered few difficulties. The airport lies four miles north and a quarter-mile east of Joplin. It is served by a modern three-lane highway the four-mile distance, with just a two-lane roadway for the remainder. There are only five blocks of downtown traffic between the airport and the dense business district; it is accessible at high speed.

Runway Construction

The total area is 319 acres. The land is in two 160-acre tracts, with one acre in the extreme southeast corner reserved for the country schoolhouse which has always stood there, with the highway abutting on the south. The two tracts overlap by half, which made it possible to have the north-south runway 3,650 feet long, and the northwest-southeast runway 3,705 feet long. The southwest-northeast run is 3,555 feet, and the east-west only 2,570 feet. All runways are 100 feet wide, and their proportionate lengths indicate the prevailing wind directions; the east-west one will have little service.

Construction of the runways entailed 9,469 cubic yards of excavation and 18,909 cubic yards of gravel in the surfacing. In the grading and leveling, 2,000 loads of rock and dirt were taken from the center of the field. A 4½-acre lake was built in the extreme western edge to take the water from some drains, and also to provide a beauty-spot on the field. It required 3,352 cubic yards embankment and 100 cubic yards of riprap.

Runway Surface Unusual

Joplin is located in an extensive lead and zinc mining district, where considerable use of mine tailings, "chats," has been the practice in road work. That of course furnished the incentive for surfacing the runways with the chats. They are mostly flint rock, screened to about a quarter-inch size in the milling process. On the particular dump from which the airport chats were taken, they had become so mixed with clay that when they were rolled onto the rock foundation they packed hard. This gave a good semblance of white concrete. The material reflects light, is "air-visible." It also comes up in chunks like asphalt when it is torn up, and is nearly dustless. However, a concrete landing apron of 3,560 square yards was laid at the south end of the north-south runway, and the other runways were black-topped for a distance of 100 yards at

THE AIR-VISIBLE RUNWAY SYSTEM AT THE JOPLIN MUNICIPAL AIRPORT

Photo taken before hangar, shown at head of article, was built

the hangar end, as a further protection against dust.

In draining the field, 19,026 feet of various sizes of concrete pipe and 12,382 feet of French drains were employed. The concrete pipe was made by the Zeidler Concrete Pipe Co., of Joplin. All drains lead away from the runways and the hangar. There were 4,227 cubic yards of rock, 701 cubic yards of gravel, and 9,367 cubic yards of excavation, with 35 catch-basins, in the drainage system for the airport.

The center of activities is of course around the main hangar, which also houses offices, waiting room and other facilities. It is located in the south-central portion of the port and lies inside a brown fieldstone barrier which separates the parking space for 1,500 cars from the air field proper.

Hangar and Administration Building

The hangar is constructed of reinforced concrete with 14-inch walls. It has a clear space of 100 feet square for plane storage, with 20 feet clearance from floor to roof beams. There are ten sliding doors, each of which weighs a ton, five going into pockets at each end of the building and thus providing a 100-foot opening. All-steel window sash is used.

The office facilities are, properly speaking, in an annex on the north side of the hangar. It is 20 feet wide, runs the length of the building and provides space for the manager's office, the waiting room, headquarters for the ticket office and radio facilities, rest rooms and shower baths, the electrical service vault and control room. The fixtures in the waiting room are of chromium, with red or blue leatherette upholstering. The floors are finished in an oblong block pattern Tiletex, alternating black and dark brown, and the walls are cream with yellow woodwork. Heating is by natural gas, with a 2-inch main from the highway serving the entire building. Another 2-inch main encloses the 25-pair telephone cable. The telephone and electric power companies were induced to contribute the work of placing their cables underground for a half-mile along the highway south of the airport, to reduce the obstruction hazards.

The telephone junction block and remote-control lighting panel are located in the manager's office. He controls all lights by merely pressing buttons. The lighting equipment is of latest design, with Pyrex heat-resisting glass in all lenses. It is Westinghouse equipment, with one exception.

Lighting

There are 78 border and marker lights of standard type; two banks of field floodlights, seven on the east and eight on the west; two apron floodlights which have stippled lenses to protect pilots' eyes from their beams. Six and a quarter miles of No. 8 non-metallic underground cable was required for the field; the service is a 2-conductor No. 6 lead cable to the highway and thence west to the power line, 3,250 feet, underground.

The revolving beacon is a 500,000-candlepower with 36-inch lens, green in one end and clear in the other, atop a steel tower which is 50 feet to the beacon platform. It is located outside the barrier, in the parking area. The obstruction lights at the top of the wind cone and the four corners of the hangar are new type, with diffusing red glass covers inside plain red glass covers. It has been found that the single diffusing cover type collects dust, becomes practically invisible. This is a Holophane development.

That sums up the facilities of the new, modern airport built by the city of Joplin, which has put it back on the middlewestern air map. The airport is under the direction of Joe H. Myers, Public Utilities Commissioner of Joplin, and Ralph Nolan is the Airport Manager.

LIGHTING EQUIPMENT
Westinghouse Electrical Equipment

Service vault:
- 2 totally-enclosed disconnecting switches
- 2 60-amp. 2,500-volt indicating-expulsion type fuse blocks
- 1 KS 2-pole, 5,000-volt, 200-amp. automatic oil switch, with automatic overload and undervoltage protection

Control room:
- Circuit No. 1: 1 25-kva 2,300- to 220-110-volt distribution transformer for general lighting
- Circuit No. 2: 1 5-kva series regulator for border and marker lights
- Circuit No. 3: East field floodlight bank
- Circuit No. 4: West field floodlight bank

Border and marker lights:
- 78 standard type, fed by regulator, which is operated by automatic oil switch with low-tension side controlled from manager's office. Border light side is protected by Rocco series protector in case of open circuit

East floodlight bank:
- 7 KAG25 totally-enclosed floodlight heads, each using a 3,000-watt, 32-volt concentrated-filament floodlight lamp. Lights mounted on 3 17-foot hollow-spun concrete standards

West floodlight bank:
- 8 lights with same specifications as for east bank

Windcone assembly:
- 4 200-watt lamps in 14-inch reflectors light cone in any direction, with ample roof illumination

Apron floodlights:
- 2 1,000-watt apron floodlights

Beacon:
Revolving 36-inch beacon, 500,000-candlepower, atop steel tower

Ceiling indicator:
Scale located at northeast corner of hangar building, beam light 500 surveyed feet southeast, with 110- to 12-volt transformer in base, 420-watt, 12-volt bulb

Remote control:
In manager's office, NSTP312L panel, with spare circuits for possible additional equipment.

CONSTRUCTION STATISTICS

Shape:
Two 160-acre tracts, half overlapping, center 1 mile long, an outcropping 80 acres to the southeast, less 1 acre occupied by a country schoolhouse, and a similar 80 acres northwest. Area, 319 acres.

Runways, all 100 feet wide:		
North-south	3,650	feet
N. W.-S. E.	3,705	"
S. W.-N. E.	3,355	feet
East-West	2,570	"
Drainage:		
French drains	12,382	feet
Rock in drains	4,227	cu. yds.
Gravel in drains	701	" "
Excavation	9,367	" "
Catch-basins	35	
6" concrete tile	10,833	feet
8" " "	3,152	"
10" " "	740	"
12" " "	953	"
15" " "	1,533	"
18" " "	564	"
24" " "	1,251	"
Runways:		
Cu. yds. excavation	9,469	
Cu. yds. gravel	18,909	

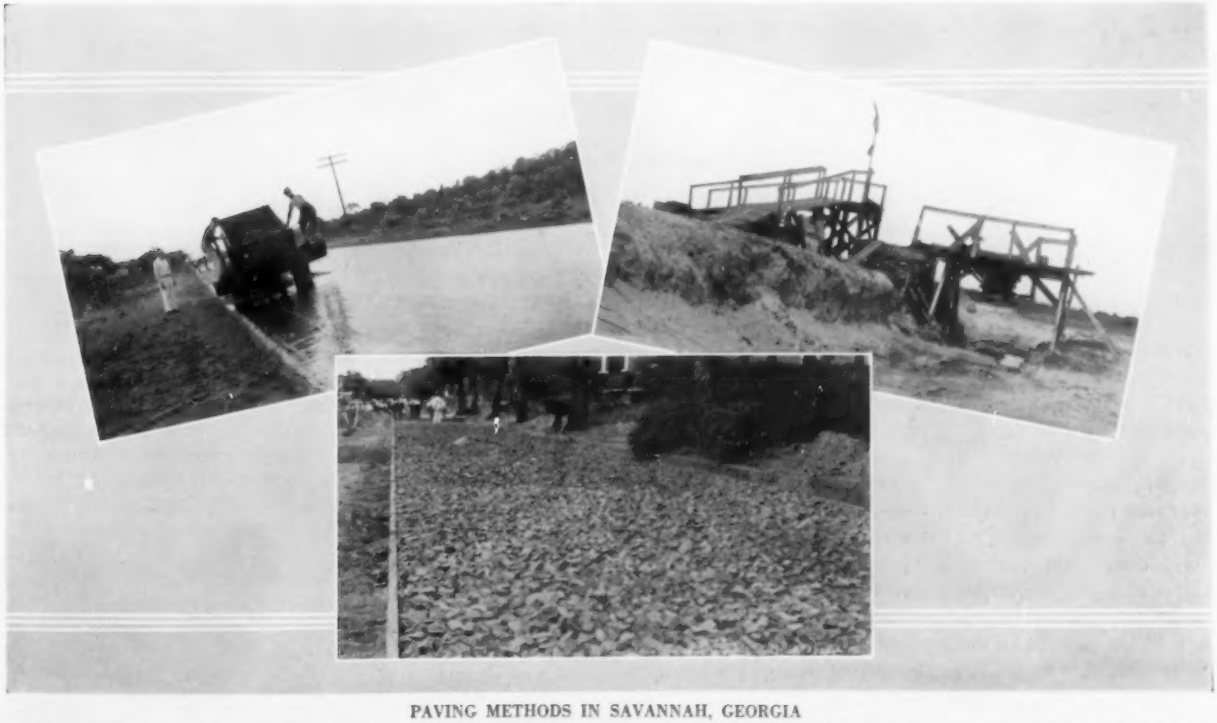
Recent Paving Projects in Savannah Completed with Relief Labor

Asphalt Stabilized Bases and Cement-Bound Macadam Using Old Concrete and Brick for Aggregate

WHEN asked, in a recent interview, what he was doing in street paving, A. S. Goebel, City Engineer of Savannah, Ga., replied, "Cement-bound macadam as we have for many years and a lot of low-cost bituminous work. We have over 230,000 square yards of CBM in our streets now, and as fast as we can get more cheap aggregate like discarded paving brick and concrete we will put down more."

New Paving to Industrial Area

Three years ago the city built ½-mile of cement-bound macadam with WPA labor and used quarry stone furnished by a WPA project. This job was built with a concrete curb and base, also laid by hand labor. The quarry stone, ranging from 1½ to 2½ inches in size, was laid 6 inches thick and then grouted with a 1 to 2 mix by weight, which



PAVING METHODS IN SAVANNAH, GEORGIA

At left—Spreader box laying surface on double surface bituminous treatment project. At right—The platforms where a two-bag concrete mixer can be placed and fed with sand and asphalt for an economical plant-mix paving material. Center—A CBM job ready to be poured with the binder of cement grout. Bricks, broken concrete and aggregate which would otherwise be wasted makes up the major portion of this pavement

was run through a 2-bag mixer.

Continuing this project during the past summer, 1.58 miles of low-cost base was put in by hand labor. The base material was stabilized with 1 gallon of RC-1 per cubic foot as it was run through two 2-bag mixers hauled along the road and fed direct by hand. The men fine-graded the road and shoveled direct to the skips of the mixers, using the skips as measuring hoppers, and then wheelbarrows to place the material. This stabilized base was rolled with a 6-ton Buffalo-Springfield tandem roller and permitted to receive three months of traffic compaction. It was then given a double bituminous treatment consisting of a tack coat of 0.3-gallon of AC-15 of 80 penetration asphalt applied with a 600-gallon Etnyre distributor owned by the city, and then trucks were backed over the asphalt, spreading from 25 to 30 pounds of ¾- to ¼-inch stones per square yard, using trough-like spreaders made in the city shops. This stone was hand-broomed and spotted, and a seal coat of 0.2-gallon per square yard was applied and ⅜-inch stone spread at the rate of 20 pounds per square yard and rolled in. The spreader boxes are suspended from the back of the trucks by chains and have a broken 2-inch slot along the bottom. One observer referred to them as "knee-action spreader boxes," for men stand on either end of the box and shake it by jumping up and down. This insures a constant flow of stone from the slots as the material runs from the elevated dump-truck body into the box.

Recent CBM Work

A recent WPA project of 48,000 square yards of cement-bound macadam consisted of paving a street 45 feet wide between curbs and with car tracks down the center. The 20-foot center section was paved after the car tracks were removed. Traffic used the outside while the center was paved. Three paving gangs were used on this work. As a feature of the cement-bound macadam, Savannah is using a wooden strip for an expansion joint with a 1-inch asphalt poured seal on top.

Mixing Plant at Airport

Some 800 feet from the new cobblestone Administration Building at the Savannah Municipal Airport is a sand bank which contains less than 10 per cent clay. As part of the program of extending the airport, this sand bank is being removed, but the sand is of such excellent quality for plant-mix bituminous paving that the city has set up an unusual mixing plant at the bank. There is a dumping platform with a small hopper, beneath which the trucks drive to receive their loads. Adjacent to this is a slightly lower platform on which is mounted a standard 2-bag concrete mixer for mixing the sand-clay and asphalt. A straight ramp leading to the skip of the mixer is used by the wheelbarrow gang to bring up the sand, and a second ramp at right angles to it permits the empties to return to the pit. Fifty-five-gallon drums of asphalt are mounted next to the paver, and the asphalt is drawn off into 11-quart pails which are emptied into the mixer as the skip is raised.

When this mix is spread on the road, it is rolled and bladed to shape simultaneously. It is usually given a seal consisting of a single surface treatment in some thirty to sixty days.

T. R. K.—881.

Cities Must Replan for the Gasoline-Electric Revolution

By GUSTAVUS W. DYER
Professor of Economics, Vanderbilt University, Nashville, Tenn.

THE steam revolution centralized all life. The gasoline-electric revolution is decentralizing all life. The steam revolution brought industry into a group of centers. The gasoline-electric revolution is driving industry back to the small towns, the villages and the rural sections.

Population will follow the industries.

The gasoline-electric revolution may be impeded and arrested for a time, but only temporarily. In the end it will re-mold and re-shape our civilization.

It has destroyed the necessity of living in crowded centers, and is rapidly destroying the scarcity value of space.

This does not mean that cities must pass, but it does mean that cities must adjust to the new order, created by the new revolution, or decline. Cities must give up the old, narrow conception of the city as a crowded community whose boundaries are fixed by arbitrary political lines, and adopt the economic conception of the city as the center of business activities that reach many miles out.

In this country we have everything—unlimited space, unlimited natural resources, capital, equipment, superior business leadership, everything that is needed to enable us to take full advantage of the new order, the new opportunities, and capitalize them in the interest of a higher civilization full of life and hope for all. In a short time the old highway will again be thrown wide open for American business and American industrial progress.

From the beginning of human society the systems of transportation have constituted the dominating directive force in civilization. The locations of populations have been fixed by the means of transportation at hand.

The steam revolution was by nature a great centralizing force. It made it possible for the great majority of the people to live in cities. The roads of economic advantage all led to the city, to the industrial centers. The great opportunities in business were in the city, and the larger the city, the greater the opportunities. The population followed business.

But the cities were built for horse-and-wagon transportation. The crowding in cities is unnatural, but it was made necessary on account of the lack at the time they were built of an effective intra-city transportation system. People were compelled to live near their work.

Now, we are in the midst of the second great industrial revolution in the history of the world. This is also a transportation revolution. But the motive power is new; it is a combination of gasoline and electricity. This revolution started just a generation ago. It has moved at lightning speed. Its achievements in the brief period of its life are almost beyond comprehension.

It has built a great new highway system connecting every community in the land with every other community. It has provided a private car of high speed and great luxury within the reach of practically every normal American family.

A generation ago there were millions of people in this country in what was regarded as hopeless isolation. They were living back in the rural sections, on rough dirt roads. They could travel but little. They were cut off from practically all the conveniences and luxuries of modern civilization.

Today that isolation is gone. The new revolution has destroyed it. The country must be rebuilt, and rebuilt on a far better plan than was thought possible a few years ago.

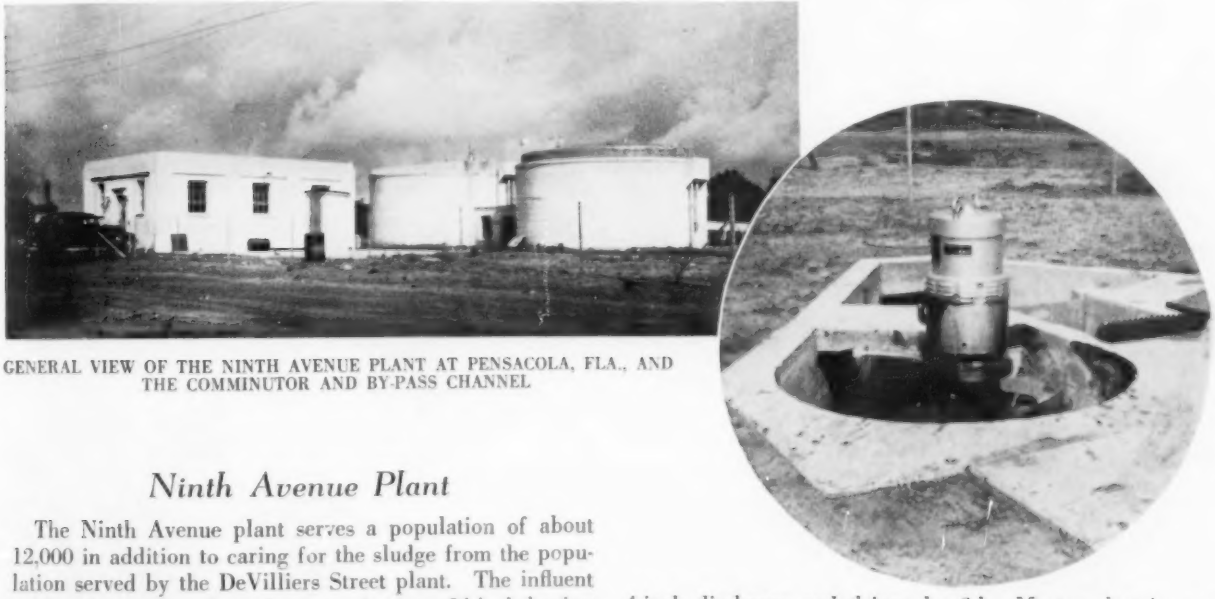
—From a recent address before the American Institute of Real Estate Appraisers, professional branch of the National Association of Real Estate Boards.

Two New Sewage-Treatment Plants Serve City of Pensacola

Bacterial Reduction Main Aim — Sludge of Both Plants Treated at One

EARLY in 1938 the city of Pensacola, Fla., started the operation of two new sewage-treatment plants aimed to reduce the bacterial pollution of Pensacola Bay, where bathing and the taking of shellfish had recently been suspended. The two plants are located on separate watersheds, the Ninth Avenue plant having sedimentation and separate sludge digestion with pre-chlorination for 50 per cent bacterial reduction, while the DeVilliers Street plant is similar but delivers all sludge to the Ninth Avenue plant 6,000 feet away for treatment.

Considerable study was made of various plans for the treatment of the sewage at the DeVilliers Street plant, including pumping all the raw sewage to the other plant, and also complete digestion at the smaller plant. The present design whereby the raw sludge of the DeVilliers plant is pumped 3,000 feet to a main sewer through which it flows another 3,000 feet to the plant was decided upon as the most economical.



GENERAL VIEW OF THE NINTH AVENUE PLANT AT PENSACOLA, FLA., AND THE COMMINUTOR AND BY-PASS CHANNEL

Ninth Avenue Plant

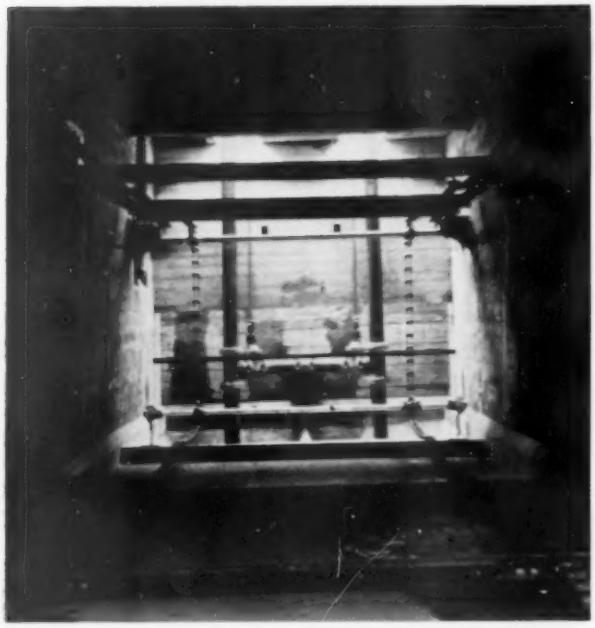
The Ninth Avenue plant serves a population of about 12,000 in addition to caring for the sludge from the population served by the DeVilliers Street plant. The influent to the plant enters through two mains, one 24-inch having the main flow, and an 18-inch main with a minor flow. The sewage flows to a 25-inch Chicago comminutor, but a fixed bar screen is provided for use in case of repairs, and a third channel is provided for a possible second comminutor.

From the comminutor the sewage flows to the two settling basins, where it has a two-hour detention period. The basins are 16 x 78 feet with a 9-foot depth of sewage. A single drive for the pair of Link-Belt Straightline clarifiers with two clutches permits using the drive for either basin. From the clarifiers the sewage flows to the effluent channel, in which is set an aluminum weir with a separate stilling well in which a Gurley recording gage shows the elevation of the water flowing over the weir. This measuring device is rendered inoperative by high tides in the bay, which is only a few feet below the elevation of the sewers of the city. As high tide comes at a different time every day, it is expected that an accurate record of flow through the plants will be obtained after the plants have been in operation for a year or so. Sludge-removal schedules and chlorine dosage will be adjusted to meet the flow conditions when accurately determined from these records.

The plant is designed to care for 1.7 mgd of sewage, and the inflowing sewage is chlorinated just beyond the comminutor with 5 ppm or one-half the chlorine demand of the sewage. The supernatant liquid from the secondary digestion tank enters one of the settling basins at approximately the same point where the pre-chlorinated sewage enters.

In the small pump-house two Carter sludge pumps, with 4-inch discharge and driven by 3-hp Master electric motors and controlled by a program clock, deliver the sludge to the primary sludge digestion tank. The program clocks operate the clarifier and comminutor as well as the sludge pumps. The following tentative schedule for operation of clarifiers and sludge pumps has been worked out:

CLARIFIERS		PUMPS	
ON	OFF	ON	OFF
6:30 A.M.	9:00 A.M.	7:00 A.M.	9:00 A.M.
10:00 A.M.	11:30 A.M.	10:30 A.M.	11:30 A.M.
1:00 P.M.	2:00 P.M.	1:30 P.M.	2:30 P.M.
4:00 P.M.	6:30 P.M.	5:00 P.M.	7:30 P.M.
10:00 P.M.	11:30 P.M.	11:00 P.M.	12:00 MIDNIGHT
2:30 A.M.	3:30 A.M.	3:00 A.M.	3:30 A.M.



INTERIOR OF THE DE VILLIERS STREET CLARIFIER, LOOKING TOWARD THE SLUDGE SUCTION PIPES AT THE INFLUENT END BEFORE SEWAGE WAS ADMITTED

The schedule for the sludge pumps, it will be noted, is set slightly later than the time for the clarifier so as to permit an accumulation of sludge before the pumping is started.

Both plants are running on this schedule at the present time but when more complete records of flow characteristics become available the intention is to correlate the operating schedules as closely as possible with the average daily flow of sewage.

The Dorr Multi-Digestion System is used for the treatment of the sludge. The 35-foot diameter primary digestion tank is equipped with heating coils and a manually controlled, electrically driven Turbo-Mixer for stirring the sludge. The secondary digester of the same size has a floating cover, while the primary has a fixed cover with a gas collection dome which delivers the gas to the secondary digester. The flow of gas from the primary to the secondary and the total gas from the secondary are each measured by a Metric Metal Works gas meter.

Between the two digesters is a valve house for controlling the flow of sludge, for sampling and for measuring the gas produced. The 2-inch gas line from the secondary digester divides into two 2-inch lines and one goes through a pressure relief trap, two flame traps and one drip trap, and thence to the waste-gas burner. From this line also is tapped a ½-inch pilot gas line which is equipped with two flame traps. The other 2-inch line goes through two flame traps and one drip trap, and thence to the heating boiler in the plant for heating water to be pumped through the digester coils. The floating cover of the secondary digester carries an 8-inch water seal, while the relief trap carries a 6-inch water seal. Gas goes to the waste-gas burner only when the 6-inch relief trap seal blows.

There are four 2-inch sludge sampling lines with plug-valves in the wall of the secondary digester, permitting sampling at four depths, but there are no sample valves in the primary. An 8-inch cast iron line from the bottom of the primary digester is carried up outside the digester to a weir box with adjustable rings to set the overflow height, and a 6-inch line carries the overflowing sludge to the secondary. An Oceco flame trap or arrester is mounted on the seal on top of the primary and the secondary digesters.

Sludge theoretically remains in the primary digester for a period of four weeks and then in the secondary for eight weeks. The digested sludge flows from the secondary into a concrete distributing flume to the ten underdrained sand drying beds. The underdrained tile is laid in gravel ditches. Concrete runways are built through the beds for the trucks being loaded with the dried sludge.

Within the control house where the sludge pumps are located is a well-equipped laboratory, a chlorine control room and a storage room. The boiler for the digester coil water is located in the same room with the sludge pumps. Circulation of the heated water in the coils is effected by a Thrush circulator. A temperature control made by the Power Regulator Co. is used to permit mixing the cooler water from the digester line with water that may be too hot coming direct from the boiler. This is done through a thermostatic bulb and a three-way control valve which works automatically to deliver water of 100 to 130 degrees F. to the digester coils. A Republic recording temperature gage shows and records constantly the temperature of the water delivered to the digester coils and the return water. The Ideal gas boiler has a capacity of 315,000 Btu per hour.

The DeVilliers Street Plant

The DeVilliers Street treatment plant serves about 8,000 people and is designed for a flow of 0.8 mgd. A 20-inch sewer enters the plant, where the sewage is screened with an automatically controlled Link-Belt mechanically operated bar screen, which delivers the screenings to a hopper from which they drop direct into the Shone ejector. A Wallace & Tiernan chlorinator similar to that at the Ninth Avenue plant applies chlorine to the sewage as it enters the settling basins. From the settling basins the sewage flows over an aluminum weir and on to the bay. There is a stilling well and Gurley water level recorder similar to that at the Ninth Avenue plant.

The settling tanks are equipped with a pair of Link-Belt Straightline clarifiers, and in general the plant is operated similarly to the other described above. The outfall sewer is a cast iron line laid in 1909, and the pipe enamel both inside and outside the pipe is still intact, as shown by a piece of the pipe broken off during the construction of the present plant.

The sludge from the clarifiers and the screenings are delivered through 3,000 feet of 4-inch cast iron force main to the sewer flowing to the Ninth Avenue plant, by a Shone ejector operated automatically by a program clock. To furnish air for the operation of the ejector, two Quincy compressors with 5-hp General Electric motors supply air at a pressure of 50 pounds to a 50-cubic-foot air tank, as required to maintain the pressure.

These two new sewage-treatment plants were built as a WPA project, with the city's contribution amounting to about $42,000. The plants are operated under the direction of Oliver J. Semmes, Jr., City Engineer, with Harry Thornton as Engineer in Charge.

Preventive Maintenance for City Motor Equipment

How the Department of Sanitation, New York City, Cares for Over 3,300 Pieces of Motor Equipment

WITH a fleet of motor trucks and other motor equipment consisting of over 3,300 units, the maintenance problem of the Department of Sanitation, New York City, is naturally a major one. A total of 675 men are employed in the maintenance and repair group alone. Of these, 150 are scattered in 56 garages throughout the five boroughs, where all daily minor repairs are made, and 425 are assigned to the Central Motor Repair Shop of the Department, located at 15th Street and Avenue C, Manhattan.

The building housing the Central Motor Repair Shop consists of ten floors, with approximately 500,000 square feet of floor space. The Department uses all but two floors of this building, which is completely equipped to do practically all work necessary on any type of vehicle owned by the Department. It has a complete machine shop, including lathes, cylinder grinders, brake repair machines, machines for repairing and adjusting hydraulic hoists and hydraulic pumps, and, in fact, for the repair of all units special with the Department. It includes a complete motor room for the overhauling of engines, and a test stand for running in; blacksmith shops, welding units for both arc and gas; dynamometer; and one entire floor is given over to a modern paint shop. Every effort is put forth to keep the equipment looking clean and sanitary, and present plans call for at least one coat of fresh paint every six months on those units which are in daily use.

There is a battery charging and repair room where a battery may be completely overhauled or a new one constructed. The terminal posts, strap connections and nuts are cast in dies made in the machine shop. Service records show that the batteries have materially longer life than the

SCENES IN THE CENTRAL MOTOR REPAIR SHOP OF THE DEPARTMENT OF SANITATION, NEW YORK CITY, WHERE PREVENTIVE MAINTENANCE IS A FACT

average commercial unit. There is also a complete electrical test and repair room, where new accessories may be tested for comparative efficiency, and repair work done on nearly every electrical device that is found on a modern vehicle. All this equipment, of course, is for use at the time when major repairs are forced upon the Department, but the greatest thought and effort is concentrated in trying to postpone this expense of major repairs just as long as possible. The methods are simple in the extreme, but they are none the less important.

Preventive maintenance is fundamentally sound, and insures regularity, uniformity and thoroughness in its application to a single vehicle or to a huge fleet such as is operated by the Department of Sanitation, New York City. There are 1,075 heavy-duty trucks on schedule for this service every month. A unit is taken out of service for one day and driven to the Central Motor Repair Shop by the regular chauffeur. His work during the day is that of cleaning and wiping the engine and chassis, and then lubricating the entire unit under the supervision of the attending mechanic. For this work, modern power grease guns are used. The very best men available are assigned for the general service work and have long since become expert. There is an average of 43 points of inspection that this mechanic is responsible for, which include such items as checking with a motor tuner; cleaning and adjusting spark plugs; adjusting valves; checking generator for charging rate; examining starter; checking and filling the battery with water; inspecting and adjusting belts for the fan, water pump and air compressor; checking and cleaning the water circulating system; checking and correcting, when necessary, the front-wheel alignment; equalizing the brakes; checking tire inflation and any damage that may cause blow-outs; watching tire replacement to see that tires are properly matched for wear; and dozens of other points which, if properly corrected, will help to insure continual operation. When major repairs are necessary on a transmission, engine or double reduction drive, it is immediately replaced by the unit repair system and the truck put back to work with the least possible delay.

School of Instruction

The Department operates a regular School of Instruction which is under the supervision of trained men, and where small groups of operators are brought according to a definite program and given careful instruction and experience in the handling of the new pieces of equipment. It is only after passing a satisfactory test, under the supervision of these trained men, that a chauffeur is assigned to a vehicle. The Department spends considerable effort on this project and is well repaid in the lessening of accidents and damages to the various units.

For example, during the early fall of 1937 the Department of Sanitation shipped ten snow loaders to Lake Placid, N. Y., for operator training. Ten groups of thirty men each were then sent there at the Department's expense and given several days' work with these loaders under actual snow conditions. It was felt that the city would be amply repaid for its trouble through the much greater efficiency of the men during a storm in the city.

Division of Safety

Under the direction of an expert safety engineer, the Division of Safety is continually on the alert to assist the Department in setting up rules and regulations for the safe operation of Department vehicles on the city streets. This constant policing of equipment and immediate checking of all accidents is responsible, to a great extent, for the Department's safety record.

—From a paper presented by Loron G. Kurtz, Director of Motor Equipment and Maintenance, Department of Sanitation, New York City, before the 1938 Public Works Congress.

Public Recreation to Have a Special Building on "Treasure Island"

OUT in the middle of San Francisco Bay the newest of all American cities is rapidly nearing completion. Work is being rushed on every building to prepare it for occupancy by the hosts who will welcome visitors to this wonder of modern magic—Treasure Island.

Although situated within the city limits of San Francisco, Treasure Island is a city in itself with fire and police departments, a bank, stores, manufacturing of various products in exhibits, restaurants, theaters, amusement area, and a sports field and building devoted to the subject of Recreation.

RECREATION BUILDING, GOLDEN GATE INTERNATIONAL EXPOSITION

For the first time in the history of any world fair or exposition, the story of recreation will be presented to the millions of visitors who throng to Treasure Island. As a part of the state of California's $5,000,000 participation in the Golden Gate International Exposition, a separate building 200 feet long by 100 feet wide will house an exhibit in diorama form depicting the activities and facilities offered by recreation departments of the various cities of California. A little theater for the presentation of dramatics, music, and puppetry, a room housing a hobby and handicraft exhibit, a recreation library, kitchen, offices, and information booth will be found in this building. Outside the building, on one end, there will be a children's model playground with apparatus, and across from it a back-yard recreation area with outdoor fireplace and picnic tables such as any homeowner might wish to install for the benefit of his own family.

Hollis Thompson, City Manager of Berkeley, is serving as Chairman of the Recreation Committee of the California State Commission for the Golden Gate International Exposition, with the undersigned as Recreation Administrator.

CHARLES W. DAVIS.

To Make Housing Catch Up with Highways

"FROM 1929 through 1936 the total state and Federal subsidies for roads and highway maintenance reached $12,000,000,000, or an average of $1,500,000,000 a year. This is far more than the total annual contributions needed from both Federal and local governments to rehouse 20 per cent of the population in decent homes, and thereby actually 'solve' the American housing problem. And yet, who would claim that our highway system has been other than a prudent and economical measure in the best interests of the national welfare?"

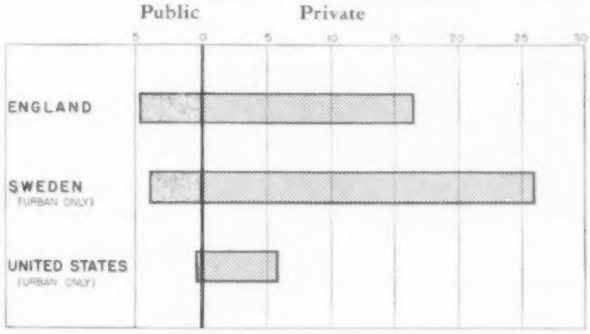
The foregoing is one of many challenging statements in an 88-page pamphlet, "What the Housing Act Can Do for Your City," published December, 1938, by the United States Housing Authority.* Taking the case of a hypothetical city of 200,000 population, the pamphlet assumes that, of the 50,000 families in that city, there is need to rehouse by public initiative 10,000 low-income families now occupying slums. Assuming that the property tax now charged to these 10,000 families is approximately $40 per family per annum, the report estimates that:

"If the United States Housing Authority's slum-clearance and low-rent housing program were extended to provide decent homes for the vast majority of the 'Third of a Nation' now living in slums and shacks, the ensuing cost to local communities, represented by tax exemption of public housing projects, would mean that the present average local tax rate of about 2 per cent would increase theoretically (but not actually) only to an average rate of about 2 1/10 per cent."

This assumes, of course, very liberal annual subsidies from the Federal Government. Under the present United States Housing Act, an $800,000,000 investment by the USHA in slum clearance and low-rent housing projects is authorized. This is in the form of loans to be repaid in

* See page 97 of the January issue of THE AMERICAN CITY.

DWELLINGS BUILT PER 100 FAMILIES 1930–1937



FIGURES AND SOURCES ON WHICH ABOVE DIAGRAM IS BASED

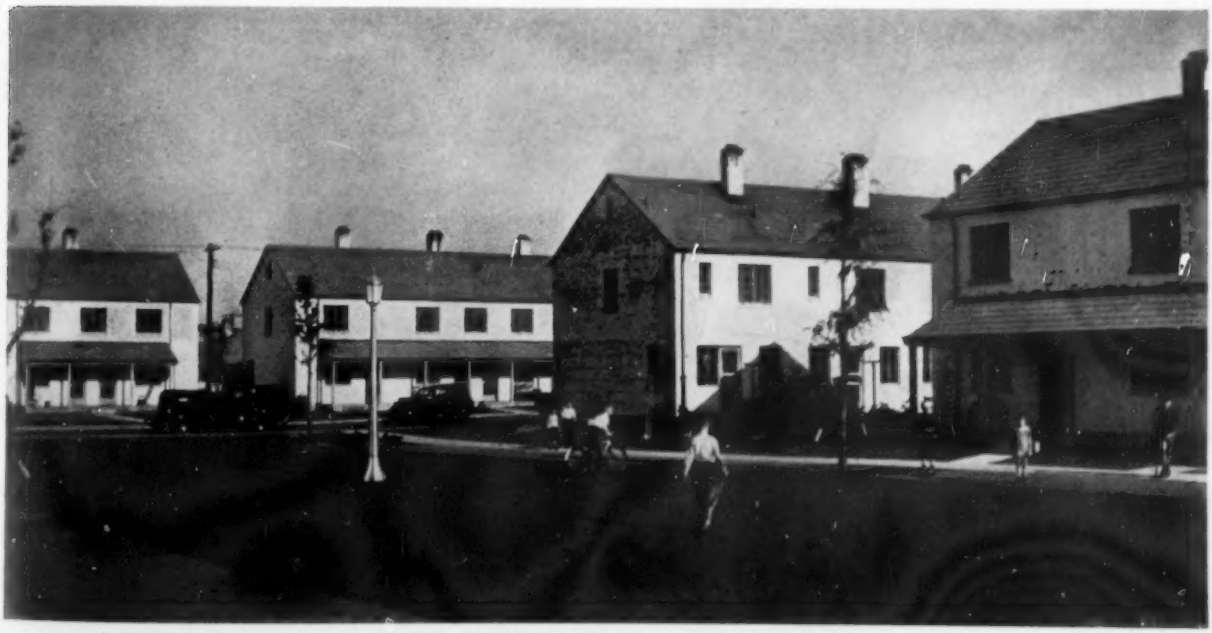
	Number of families	Total dwellings built 1930–1937		By public agencies or other non-profit enterprise		By private enterprise	
		Number	Per 100 families	Number	Per 100 families	Number	Per 100 families
England	10,233,139	2,189,366	21.4	496,447	4.9	1,692,919	16.5
Sweden [1]	647,770	195,749	30.2	25,502	3.9	170,247	26.3
U. S.	17,372,524	1,041,265	6.0	29,559	.2	1,011,706	5.8

[1] Urban families and urban homes built.

England.—"Housing, House Production, Slum Clearance, etc., England and Wales. Position at 30th of March 1938." British Ministry of Health. Number of families from 1931 Census.

Sweden.—"Federal Home Loan Bank Review," September 1936. American-Swedish News Exchange, Inc., New York. Urban households from 1930 Census.

United States.—"Monthly Labor Review," January 1938. Estimate of public housing, from Bureau of Labor Statistics, includes urban homes built or aided by Public Works Administration, Farm Security Administration, Works Progress Administration, and Alley Dwelling Authority. Urban families from 1930 Census.



A HOUSING PROJECT LEASED TO THE CHARLESTON HOUSING AUTHORITY BY THE U. S. HOUSING AUTHORITY

full with interest. The cost to the national taxpayers will be the interest and amortization payments which, under the terms of the Act, may run as high as $28,000,000 per annum over a 60-year period.

Asserting that "practically every exercise of public responsibility for productive purposes draws heavily upon the services of private enterprise and proves a stimulus to the profitable expansion of industry," the publication continues:

"The public highway system eliminated private toll roads and toll bridges, wiped out miles of good farm land and expensive buildings, and cost the taxpayers millions and even billions of dollars. But where would the great automobile industry, the cement and rubber industries, and countless other contributions to our national prosperity have been without good roads?

"Likewise, in a public housing program, many different kinds of private enterprise participate directly or indirectly. The various types of individual initiative should be examined one by one, in order to consider exactly what their particular stake may be and what they stand to gain or lose by a large-scale public housing program. One thing which becomes evident immediately from such a survey is that only a very small part of the entire public housing program is actually 'public enterprise.'

"Manufacturers are outstanding representatives of the business community. The participation of productive industry in the housing program is simple, direct, and entirely on the profit side of the ledger. Of the $889,000,000 which constitutes the immediate public housing program ($800,000,000 in USHA loans plus a minimum of $89,000,000 raised by the local authorities), about $338,000,000 will be spent directly for materials and equipment. . . .

"The contractor derives an even clearer benefit from the housing program. About $689,000,000 will be spent for construction alone in the first few years. This sum will be paid directly to private contractors, who will in turn use it for wages, materials, equipment, and their own profit and overhead.

"The builder of homes for sale or rent is the man most often thought of when 'private enterprise' is mentioned in connection with the housing business. Will he be hurt by public housing? As long as the new dwellings are rented at levels far below anything he can reach, and as long as the tenants are drawn solely from income groups who cannot aspire to new homes privately built, the low-rent housing and slum clearance program offers no competition to the private builder. . . .

"Far from being injured, the private builder is substantially helped by a public housing program. Last summer a partial survey was made by the Public Works Administration of the new building going on in the neighborhood of the PWA housing projects then under construction. It was reported that a total of $3,000,000 worth of private real estate improvements in the vicinity of the projects has been traced directly to the reviving effect of the housing developments."

Rebuilding a Water Supply

The Story of Improvements at Walhalla

By J. F. BEARDEN
Superintendent of Water Works, Walhalla, S. C.

A TOWN of approximately 2,500 population, located in the extreme northwestern part of South Carolina, Walhalla is the county-seat of Oconee County. In 1922 Walhalla completed the construction of its first water works, aimed to meet the demands of the community for many years to come. This did not turn out to be the case, for the increased demands and the droughts of 1924 and 1925 showed the new water works to be inadequate.

The first steps in the enlargement of the system were taken in the early summer of 1925 when the storage basins were enlarged. In 1926 the first real constructive plans were made for an additional storage basin, but owing to a shortage of funds the project was abandoned until 1928. At that time, and with the city's own funds, a 22,000,000-gallon storage basin was built. There were no filtering facilities, except a 12 x 12-foot gravel and sand bed 18 inches thick. After three years of operation, this bed proved to be worthless. In 1931 a modern filter plant, designed by William M. Piatt, consulting engineer, of Durham, N. C., was built and put into operation that same year. At the same time a Wallace & Tiernan chlorinator was installed to insure a safe sterilized water.

It is a difficult matter to secure support in small communities for adequate municipal utilities to meet the requirements of the future. In Walhalla last year it was necessary to rebuild and enlarge practically the entire water-works system. We took into consideration the financing of all the undertakings, which limited the Department to only a portion of its construction and enlargement program.

In 1931, in spite of the precautionary measures taken and the enlarging of the plant, the city was faced with another water shortage. Immediately plans were made for an additional source of water supply, but the question of financing compelled the city to wait for this greatly needed improvement. In 1933 the Federal Government began its program of assistance to municipalities, and Walhalla was among the first to apply for financial help, which was granted.

Recent Construction

The first unit in the improvement program consisted of a new pumping station located 2½ miles beyond the present storage basin and main water supply. This is about nine miles from town, and since it is not located near any power lines, a 100-hp Sterling gas engine direct-connected to an 850-gpm DeLaval centrifugal pump was installed. This delivers to a supply line of 8-inch Class 150 National cast iron pipe. The new pumping station and pipe line were completed in record time. The Federal Government supplied labor totaling $2,062.50, while the Department furnished all materials, supervision and engineering. The total cost to the Water Department was $15,029.41, less $6,000 furnished by the town to the Department.

The next improvement was the enlargement of the storage basin, for which the Federal Government furnished all labor and the Water Department furnished the supervision and engineering. Following this, a coagulation basin was built from plans prepared by the Superintendent of Water

Works and constructed with the assistance of the Federal Government. The main supply line has been enlarged from a 6-inch to an 8-inch cast iron main, and was completed September 1, 1938.

In the meantime extensions had been made to the water and sewer systems, and in 1935 the Water Department completed a municipal swimming pool financed by Federal agencies and the town of Walhalla.

DATA ON WALHALLA WATER AND SEWER SYSTEMS

WATER

Sizes	1922	1938
Galvanized laterals	2¼ miles	3 miles
6-inch cast iron	6 miles	12½ miles
8-inch cast iron	1 mile	6 miles
Total	9¼ miles	21½ miles

SEWER LINES

All sizes	11½ miles	14¾ miles

CAPITAL VALUE

Value of water and sewer systems, 1938	$334,682.60
Value of water and sewer systems, 1922	116,822.00
Increase in value	$217,860.60

BREAKDOWN OF 1938 VALUES

Water mains and laterals	$221,760.00
Sewer lines and laterals	70,000.00
Pumping equipment and chlorinator	25,000.00
Filters, coagulation basin, reservoirs	17,922.60
Total value	$334,682.60

IMPROVEMENTS MADE BY THE WATER DEPARTMENT OF WALHALLA, S. C.

1. The old 22,000,000-gallon storage basin at the beginning of the enlargement. 2. The same basin after regrading and cleaning was completed in 1937 to increase storage to 30,000,000 gallons. 3. The old settling basin and filter in 1925. 4. The new coagulation basin and filters completed in 1938. 5. A section of the new supply line of 8-inch National cast iron pipe laid by WPA. 6. The opening day at Walhalla's new municipal swimming pool

Promoting Winter Safety on Streets

The Use of Rock Salt to Prevent the Formation of Ice

By C. D. LOOKER, Ph.D.
Research Director, International Salt Company, Inc.

IN the winter maintenance of city streets and highways, two conditions are encountered, which call for different methods of attack by the engineer in charge. These conditions are ice or sleet, and snow. The use of rock salt at the proper time and in sufficient amounts is a notable aid to the road man in eliminating the hazards met when sleet and snow are encountered.

Handling Sleet and Ice

When rain falls on a cold pavement, it frequently turns to sleet or ice. This combination occurs when the air temperature is at or near freezing. If allowed to develop unchecked, sleet or ice will bond itself to the pavement and build up such a heavy layer that it can scarcely be removed with a pick.

By spreading a thin layer of rock salt on the pavement as soon as possible when sleet occurs, ice already formed will be melted by the salt, leaving a brine on the surface of the street. This brine will not allow sleet or ice to form and, consequently, there will be no further build-up of ice on the pavement. When sleet is forming and the air temperature is at or near freezing, the salt brine created by the dissolving rock salt is most effective. Studies show that salt at this temperature is 48 per cent more efficient than other chemicals used for this work. Further, rock salt does not dissolve too quickly, and thus the effectiveness is not readily dissipated.

Sound practice recommends the application of from ¼- to ½-pound of rock salt per square yard of pavement area. For a 20-foot pavement, this amounts to from 1½ to 3 tons of rock salt per mile of street. This investment in salt pays for itself many times over when compared with the hazardous condition met when ice builds up on a traveled highway. Furthermore, should it turn cold immediately following the sleet storm, the street will be free from ice. With the efficient fast spreaders and equipment on the market today, a sleet storm becomes less of a problem when rock salt is on hand ready for immediate service.

AN ILLUSTRATION OF THE EFFECTIVENESS OF ROCK SALT IN REMOVING ICE AND SNOW FROM CITY STREETS—UNTREATED SECTION IN FOREGROUND

Reducing the Snow Problem

Snow creates a different problem in that loose snow is not as slippery as sleet, but with today's concentrated traffic in cities, snow consolidates and becomes the equivalent of ice because it bonds to the pavement and cannot be easily removed. A thin spread of rock salt will prevent this condition.

When a sufficient depth of snow has fallen, plowing is necessary. The plowed snow will harden at the gutters, and later when snow loading is begun, the efficiency of the loaders is decreased owing to the packing and freezing of the mass.

Rock salt should be spread over the snow when it has fallen to a depth of from ½ to 1 inch, using the same amount of salt as for sleet. This salt will pit itself through the packed snow, and the brine will work along, forming a perfect line of cleavage between the snow and the pavement.

If the snow continues to fall to a depth that requires plowing, a small additional amount of rock salt should be spread over the snow just prior to plowing. The salt will be mixed with the plowed snow as it is cast towards the gutters and will keep the snow mealy so that it can be readily loaded and hauled away. This extra salt will keep the piled snow in a workable condition even though several days elapse before the snow is removed. Besides, the salt will melt away considerable snow, thus reducing the volume to be moved by trucks.

Tests made by the Maintenance Committee of the Highway Research Board, Division of the National Research Council, show that a ton of salt will melt 46.3 tons of ice when the temperature is 30° Fahrenheit.

A Word to the Unwise

THE story goes that once when there was a nice surplus in the treasury of a little town in South Alabama the members of the City Council became divided on whether to apply this money to a fire truck or a handsome town clock. The Chairman of the Council favored the truck, but he and those who wanted it and knew how the town needed fire equipment were sadly in the minority, and so the town clock won.

Only two weeks after a handsome clock was installed in the court-house tower, the court-house burned to the ground—clock and all. At the next meeting of the Council, the Chairman, pulling his hand down his mustache to hide a droll smile, said to the Council:

"Well—ll—I guess you fellows seen what time the court-house burned?"

Greenbelt Faces 1939

Civic and Governmental Activities of This Garden City's First Year—An Evaluation for the Future

By HUGH A. BONE
Professor of Political Science, University of Maryland

GREENBELT, MARYLAND, the oldest of the Federal Government's three planned cities,* welcomed its first resident on October 1, 1937. Its population today is about 3,000, concentrated in some 306 apartment units and 599 row dwelling units. The town is laid in a crescent shape on a high plateau, with the public buildings in the center within easy walking distance from every home. It is located 12 miles northeast of downtown Washington, D. C. Five "superblocks" constitute the basic areas. The layout is thoroughly unconventional. The houses face the parks and play areas, whereas the service entrance is on the street. The sidewalks as a general rule do not parallel the streets, but wind to suit convenience throughout the community.

Greenbelt is the only community in Maryland which can boast of a city manager form of government. Roy S. Braden was appointed by the Town Council of five as Manager. He is assisted by O. Kline Fulmer, Assistant Manager, and a staff of four. Likewise, it is the only city in the state which uses the Hare system of proportional representation to choose directors of various civic organizations. However, this system is not used in the election of councilmen.

The 1939 budget of the Town Council calls for an expenditure of $72,000 for current municipal expenses. A library, tennis courts, handball courts and possibly a recreation building are some of the projects under consideration for the immediate future. The Farm Security Administration has almost completed the construction of a $72,000 swimming pool and bath-house for the town. The pool is expected to help pay for itself through admission charges. Boating facilities for use on the artificial lake, which was used last year only for swimming, will be provided next summer by the Town Council.

The town government faces 1939 with an enviable record. During its first fifteen months (to January 1, 1939) it had only four traffic accidents, involving eight injuries. This is due in no small measure to the town plan in which street mileage and the use of the streets by pedestrians have been kept to a minimum. No buildings are close enough to intersections to seriously obstruct the view. In addition, there are five pedestrian underpasses, especially constructed parking areas adjoining the streets, and efficient law enforcement. Only ten traffic arrests have been made.

Greenbelt is unique in that Uncle Sam is the landlord. To date he has had little trouble collecting the rents, which range from $18 a month for one-room apartments to $41 a month (heat included) for seven rooms in an attached house. The total incomes of the inhabitants range only from $1,000 to $2,200 per year. The great majority of citizens report that their complaints have been promptly acknowledged and remedied, and the general feeling is that Uncle Sam is a very good landlord.

The dual legal personality, the fact that Greenbelt is at the same time a federally owned and operated project and an incorporated town of Maryland, raises some complex problems in legal relationships. The Farm Security Administration has taken care of the taxing problem by appropriating money to the state of Maryland and to Prince George's County in lieu of taxes. However, it is not always easy to ascertain which activities, such as roads and schools, should be undertaken wholly by the Federal Government, which by the Town Council, and which by the state of Maryland. The fact that there is no precedent for a number of these matters will of necessity involve a long line of arbitrations lasting perhaps for several years. Questions are already arising as to what facilities for their enjoyment and existence should be supplied by the citizens themselves and which should be provided by the Federal Government.

The community boasts an elementary school and a secondary school unequaled in the country for attractiveness, light, ventilation, athletic facilities, and modern equipment. The elementary school is in the center of the town, and as such has become the community center. The street side of the building has figures in bas-relief dramatizing the preamble of the Constitution.

Intense Civic Activity

One of the most striking observations of Greenbelt as it faces the new year is the intense community life and civic activity. The spearhead of this lies primarily in the Greenbelt Citizens Association. Its object is to "promote efficiency in Greenbelt government, education in citizenship, needed legislation, and to provide for the general welfare of the citizens of Greenbelt." Any adult in the community is eligible for membership. The Association is highly organized into committees and sub-committees and meets the first Monday in each month. Attendance at these meetings is rarely under 200. Discussion is brisk, and the meetings have all the characteristics and functions of a town meeting. In addition, a Junior Citizens Association for residents between the ages of 7 and 21 has been formed to give the youth of the community an opportunity to voice opinions and obtain experience in parliamentary procedure.

A glance at the weekly calendar of events will show meetings of the Hobby Club, Boy Scouts, Cubs, Girl Scouts, Pre-school Mothers' Club, School Age Mothers' Club, Radio Club, Glider Club, Widows' Club, Garden Club, Du-

* The other two are Greendale, Wis., and Greenhills, Ohio. Greenbelt was constructed by relief labor at a cost of about $16,000,000. It was a project of the Resettlement Administration. Out of an area of 12,259 acres set aside for the entire experiment, 3,600 are used for the social and economic needs of the town proper. Consequently, there is ample room for expansion when and if needed.

For previous references to the "Greenbelt" towns, see THE AMERICAN CITY for May, 1936, page 59, and August, 1936, page 56.

THE HOUSES IN GREENBELT FACE THE PARKS AND PLAY AREAS

plicate Bridge Club, Swimming Club, Camera Club, American Legion, and Better Buyers' Club!

Religious needs are supplied in part through the non-denominational Greenbelt Community Church, which meets in the school auditorium. Besides the regular morning worship program, a church school has been extended to provide for all age levels. Those of Catholic faith, and the members of the Church of Jesus Christ of Latter Day Saints, and the Holy Name Society, hold services in Greenbelt. A Young Peoples Society meeting every Sunday evening has enjoyed a comparatively large attendance.

A formidable number have shown themselves to be interested in music and dramatics. The Greenbelt Players have a membership of about 50 and have produced with popular success several one-act plays, and "Play Shop" productions for their own pleasure. A dance band has evolved as well as a chamber music group. The Greenbelt Choral Group meets weekly to promote musical activity for entertainment and education.

Athletics is playing one of the most prominent parts in the life of Greenbelt. The community has a recreational director who is in charge of the sixteen playgrounds, the picnic ground (which is along the shores of the lake), athletic equipment, and general community festivals. A group of the men have formed themselves into one of the most active of all the organizations, the Greenbelt Athletic Association. This group has organized an intramural league of playground baseball, touch football, bowling, and basketball. Table tennis, soccer, and hiking are other diversions which have an informal popular following. As mentioned above, plans are under way for an extensive swimming and boating program next summer.

In addition to all these activities, the theater runs three changes of programs on five nights of the week. It is no longer necessary for anyone to lack athletic activity for want of money or transportation into Washington. Furthermore, facilities for almost indefinite expansion of athletic fields, playgrounds and gardens will give the community excellent opportunity to develop its recreational program unhampered by the restrictions of space and safety found in many other cities.

Other interesting community experiments by the citizens of Greenbelt include a cooperative health plan, a credit union, and a proposal to take over as citizens' cooperatives the various retail stores and the service station, which are now operated by the Consumers Distribution Corporation, a non-profit organization formed by the late Edward A. Filene. If these activities prove as successful as now seems probable, the writer hopes to discuss them in a future issue of THE AMERICAN CITY.

Educational Activities

One of the most avid interests of the citizens of Greenbelt is in education. In September, 1938, over 300 interested persons reported to a meeting called to discuss educational interests and desires. The Education Committee of the Citizens Association by the end of its first year was successful in bringing to Greenbelt free art classes in painting and sculpture for both children and adults, and several home economics classes. By October 15 of last year it had made arrangements with the University of Maryland to offer college credit courses in Contemporary Political Problems and in Accounting. The Education Committee looks forward to 1939 to bring to the community adult forums, panels, and "neighborhood night" discussion groups.

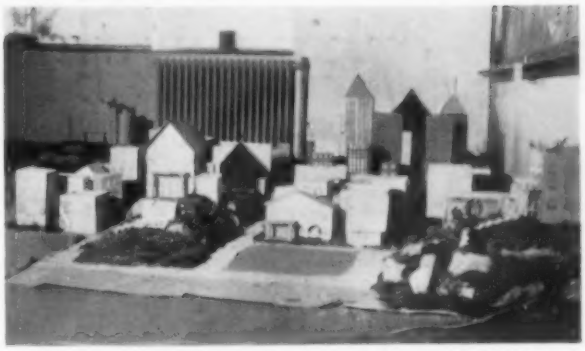
In addition, a great many clubs have study programs. Illustrative of this is the Cooperative Organizing Committee, which has an extensive program preparatory to launching cooperatives, and the Better Buyers Club and Home Makers Club, which have studied problems of the cooperative movement, such as marketing, distribution, and quality.

The elementary school is conducted on the principle of functional or progressive education. The curriculum is

THE GREENBELT SCHOOL AND COMMUNITY BUILDING

planned upon the basis of a unit of work, each unit requiring from four to six weeks for completion, such as planning, buying and ordering for a picnic, a pageant, or planting of a flower garden. Last year the fifth grade constructed cardboard models depicting the history of housing from primitive times to the present. The children have established their own cooperative store in order to buy school supplies and candies. Shares are 10 cents each, and profits have already been shared.

This system of education has yet to receive the overwhelming support of the community and county. A vigorous minority, having been used to the traditional system, has retained a highly critical attitude. However, this has in a very real sense been decidedly beneficial. It has made the school the most visited in the county by both parents and teachers. Parent-teachers meetings never fail to attract a large crowd, and interest in the schools is very great.



PASTEBOARD MODELS SHOWING HISTORY OF HOUSING
A Fifth Grade project in the Greenbelt School

Conclusions

Upon the basis of the foregoing description of the civic and governmental activities of Greenbelt, what conclusions may be drawn about its first year? What problems face its second year? Many answers to these questions are controversial. The writer submits, however, some observations which seem to be generally accepted.

In the first place, the community possesses an extraordinarily high degree of morale. There is safety, health, and a fair degree of security and happiness among the residents. The majority are enjoying psychologically and economically the highest standard of living in their experience.

There are more clubs and civic activities per capita than in any other city within the writer's knowledge. If anything, the citizens of Greenbelt are over-stimulated. They are planning too many things, and many are trying to participate in more activities than may be desirable. There is a serious as well as a humorous side to the recently adopted resolution in the Citizens Association providing for a stay-at-home week, which declared a moratorium on all club and civic activities during the final week of December.

Moreover, there is a tendency on the part of many to expect more things and projects than the city can finance or support. Already several of the more far-sighted citizens are attempting to place the brakes on their enthusiastic fellows whose "eyes are bigger than the town's income."

Greenbelt faces the problem of educating its people about the social implications of the experiment to a greater degree than it has during the past year. Much educational work is still needed before the economic needs of the community can be solved through the cooperative method. The city faces the problem of overcoming an unfavorable press and improving its public relationships. Newspapers have magnified frailties and absurd incidents to make life in "Utopia" appear ridiculous without presenting at the same time some of the tremendously significant social assets of the model community.

The Greenbelt experiment during the past year has been a particular success in the humanitarian and psychological sense. Whether it will be able to repay the Federal Government financially and become self-supporting is still conjecture. If it is able to fulfill the latter test, there will be a great impetus in the direction of "garden cities," which bid fair to revolutionize urban life. Honesty demands reserved judgment, careful reading of news dispatches, and systematic research before applauding the success of chastising the failure of this demonstration of city planning, which has been long past due in American urban history.

AERIAL VIEW OF GREENBELT, MARYLAND, UNDER CONSTRUCTION

Working at the Parking Problem

City Managers and Planners Publish Data and Comments

SOME of the more specific steps that may be taken toward solving the parking problem in central business districts are here reprinted from a recent study by the American Society of Planning Officials and the International City Managers' Association.

Parking Meters

A comparatively recent aid is the parking meter, which has been installed on some business streets in about 70 cities* since Oklahoma City made the first installation in July, 1935. These cities range in size from Clearwater, Fla., with 7,600, to Kansas City, Mo., with 400,000 population. The City Council of Cleveland, Ohio, in July, 1938, authorized the installation of 3,000 meters. There are now at least seven brands of meters. Officials in 37 cities where meters have been installed report that they have been instrumental in reducing cruising of cars and that they speed up traffic and enable more cars to find parking space; also that city officials and merchants are pleased with their operation.

Typical of the experiences in medium-large cities are those of Toledo and Dallas. Toledo made an installation of 1,000 parking meters in the central business area, the meters being set for 60-minute parking periods. They produced an average income of about 35 cents per meter per day, with a total revenue in 1937 of $109,140. In Dallas, where 1,500 meters are in operation, the gross receipts in 1937 amounted to $147,582, and the cost of operation was $12,000. Meters are strongly favored in both cities. Excellent results are reported by Fort Worth, where parking meters rid the streets of all-day parkers, eliminate double parking, and provide more space for parking. Oklahoma City claims that the object of the meters—parking turnover—has been attained. Paterson, N. J., reports that the meters relieve double parking and speed up traffic. Dallas claims that four times as many cars now find parking space as before the installation of meters. Wilmington, Del., estimates that the effectiveness of available curb space has been tripled.

Encourage Use of Mass Vehicles

The provision of rapid and economical mass-transportation facilities tends to encourage downtown workers and shoppers to use this means of travel, one of several advantages of which is that the transit units require no terminal facilities in the congested area. Ninety per cent of New York commuters use rapid transit, while in Washington, D. C., 40 per cent use mass-transportation facilities and 40 per cent use private automobiles. In a recent Oakland, Calif., survey, it was found that from 7:00 A.M. to 9:00 P. M. on a typical week-day, 342,000 persons were transported into and out of the San Francisco central business district; 91,000 of these were in street cars and buses, and 251,000 were in automobiles. The automobile passengers occupied 168,806 automobiles, but the transit passengers occupied only 7,410 transit units. The 91,000 passengers carried by transit units would require 63,680 automobiles, or nine times as many vehicles.

Off-Street Parking Areas

The limitations on curb parking and its partial prohibition in central business districts encourage the establishment of off-street parking areas by private interests.

If the provision of off-street parking facilities is left entirely to private initiative, such areas will be provided only where an immediate profit can be shown. Moreover, the privately owned lot may be considered a temporary use, since the land will be converted to more profitable uses if opportunity offers. Finally, the majority of parkers balk at paying the high parking fees charged at some private parking areas.

The value of the parking privilege appears to be an amount not dependent to any considerable degree upon how long the parking space is used, but rather upon the value to the parker of the use of his own vehicle for reaching a specified destination. If he has to park at some considerable distance, the value of the parking privilege is correspondingly decreased. It may be said generally that the parking privilege is worth 10 cents in some locations, 15 or 25 cents in other locations, independent of the length of time the parking space is used. It is clear from the studies that have been made in some cities that the charges of garages and some parking lots are higher than the mass of motorists will pay.

Most municipalities cannot expect to provide free off-street parking space for all cars seeking it, but the officials of many cities, as well as traffic experts, believe that the provision of off-street parking is coming to the front as a municipal responsibility, not only because of universal car ownership but also because it is cheaper to provide off-street parking than to widen streets and, in many instances, cheaper than to permit curb parking. Only city ownership can assure continued operation and relative permanency of location of parking lots in retail business districts. An improvement in business would undoubtedly bring a demand for land for the erection of new structures, which in turn would bring more cars to the business section.

Nearly every city has, in or near the central business district, vacant lots, tax-delinquent properties, land occupied by obsolescent buildings, or undeveloped areas which could be purchased by the city and developed for parking. Certain city-owned areas may in some instances be combined with adjacent land. If there is a steady and increasing demand for off-street parking space in a city, it would seem entirely feasible, if the areas are properly located, for large municipalities to make off-street parking lots pay their own way at a daily charge of from 10 cents to 25 cents. In certain cases a second level for parking to make greater use of the area available is justified.

* In about 90 cities as of January 1, 1939.

It has been suggested in Los Angeles that a uniform parking fee should be assessed against all registered motor vehicles in the Los Angeles area, in an amount sufficient to cover the cost of acquiring land for municipal off-street parking facilities, and to cover fixed charges for maintenance, operation, and taxes. When the necessary land has been acquired, the parking fee could be substantially reduced. The cost of providing city-owned off-street parking lots in most cities probably will be met from the general tax levy. The provision of municipal off-street parking areas may involve considerable expense, but so also does the provision of wider streets, better pavements and express traffic ways. Furthermore, expenditure on these facilities is likely to be rendered ineffectual to a considerable degree without adequate and properly located terminal facilities.

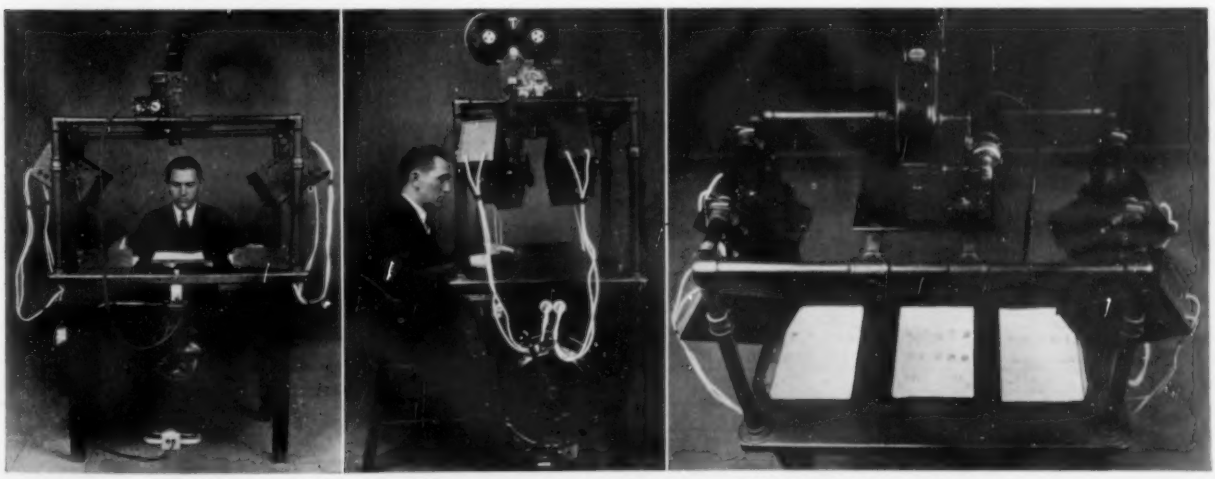
A Maintenance Truck for Utica's Police and Fire Telegraph

STARTING with an International cab chassis equipped with a Mead-Morrison winch, the Utica, N. Y., Fire Bureau mechanics' shop built a maintenance truck long needed by the Bureau of Police and Fire Telegraph. Floor sills and uprights are of 3 x 4-inch birch, with the latter reinforced with 1-inch angle-iron bent to the shape of the body sides, which are of 16-gage black sheet steel welded and bolted to the angle-iron. The ends and top are closed in the same way. The painted body is 12-1/3 feet long by 4 feet wide by 5½ feet high. Ample compartments are provided for small tools and linemen's belts, climbing spikes, cable grips, and generator sets. Four pike poles are carried in bracket boxes on the right side, and a 24-foot ladder on the left side. The winch is fitted with 750 feet of ⅜-inch steel cable. Work of pulling cable and servicing fire and police boxes goes much smoother with the aid of this vehicle, say Joseph Sullivan, Safety Commissioner, and Henry J. Luley, Supt. of Police and Fire Telegraph.

THIS COVERED TRUCK SERVICES SAFETY COMMUNICATIONS IN UTICA

Taking a Million Pictures of the Police Records of New York City

FOR the last eight months the New York Police Department has been making 35-millimeter photographic copies of its million fingerprints and records of individuals, so that in case of fire this irreplaceable information will be preserved. The machine shown is a Universal Microcamera which takes pictures of objects as small as a pinhead or as large as a newspaper spread, on 35-millimeter film as here, or on 16-millimeter film as is desired in certain library work. Cities may either own one of these cameras or, like the City Clerk of Scarsdale, N. Y., may have their police department records photographed by the manufacturers, Holbrook Microfilms, Inc., New York.



THREE VIEWS OF CAMERA FOR PHOTOGRAPHING NEW YORK'S POLICE RECORDS

Machines Speed and Organize Camden's Tax Billing

No Extra Help or Overtime, and Larger Collections

By S. P. McCORD
Comptroller, Camden, N. J.

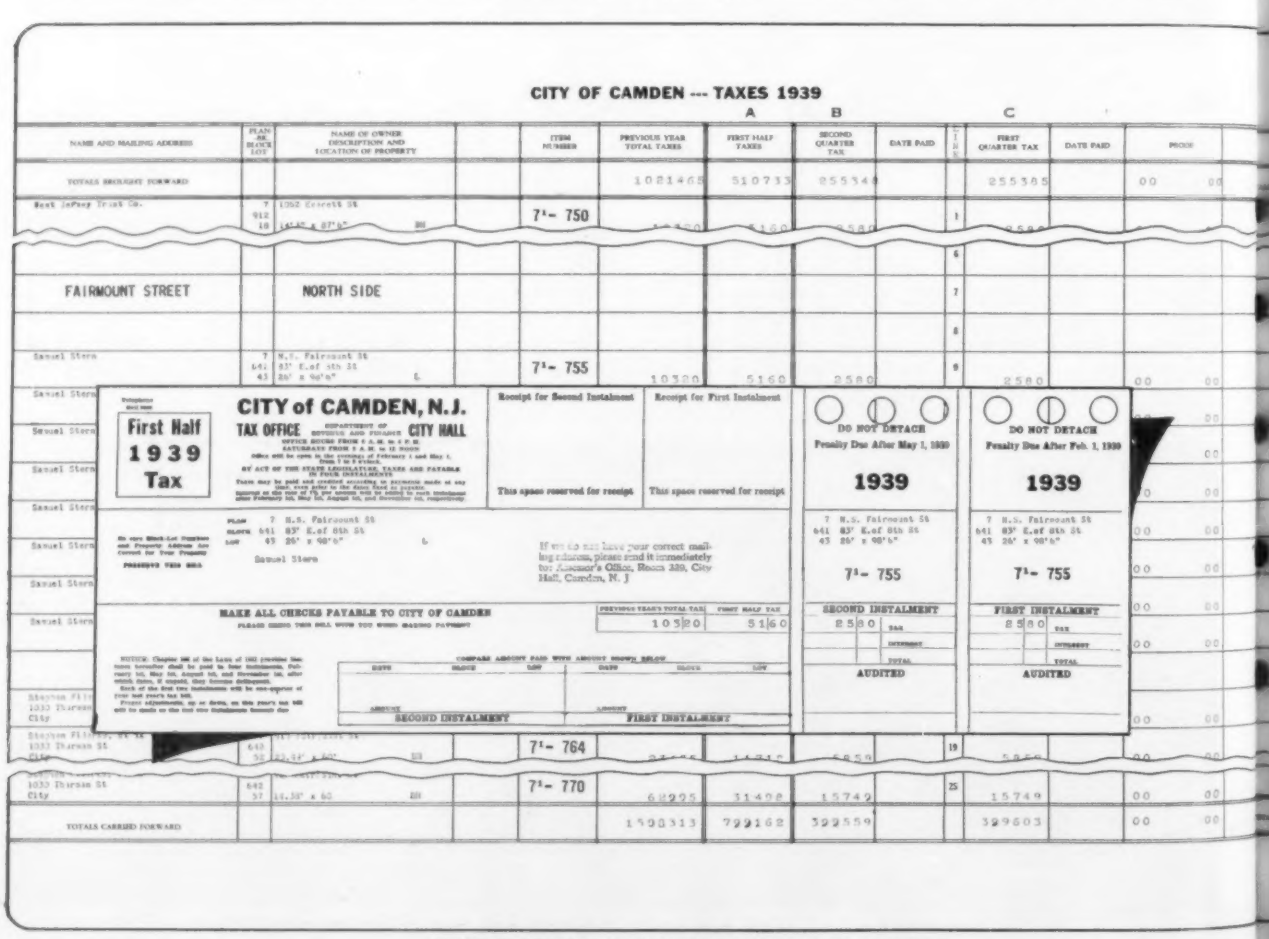
UP TO January, 1938, all the accounting work of the Department of Revenue and Finance of the city of Camden, including tax-billing as well as the control of budget appropriations, was performed by hand. I had long known that we not only urgently needed but must have modern accounting and addressing equipment, without which no municipality can function smoothly in this age, and in 1937 the Board of Commissioners agreed to the purchase of $26,000 worth of equipment.

Decision as to what equipment to buy was preceded by inspection of machine-accounting installations in a number of cities, including Atlantic City, Collingswood, Jersey City, Newark, Paterson, Philadelphia, and New York City, and attendance at the National Business Show in New York and the Business Show in Philadelphia. We ascribe the wholly satisfactory results of our new system to the selection we made.

In the present article I propose to describe our tax accounting and billing system past and present. The law in the state of New Jersey provides that the taxpayer shall pay his taxes for the year in four installments. Billing is done twice a year, each bill containing two installments.

Horse-and-Buggy Tax Work

Valuations are made annually and must be ready for use by the County Board of Taxation on October 1. The work required three months, and then the new figures were placed in pencil in the bound volumes of our blotter, requiring the time of seven men for two to three weeks.



CITY OF CAMDEN --- TAXES 1939

NAME AND MAILING ADDRESS	PLAN OR BLOCK LOT	NAME OF OWNER DESCRIPTION AND LOCATION OF PROPERTY	ITEM NUMBER	PREVIOUS YEAR TOTAL TAXES	A FIRST HALF TAXES	B SECOND QUARTER TAX	DATE PAID	C FIRST QUARTER TAX	DATE PAID	PRIOR
TOTALS BROUGHT FORWARD				1021465	510733	255548		255585		00 00
Rent InStep Trust Co.	7 912 18	1252 Everett St 14'4" x 87'6" 2½	7¹- 750	[illegible]	[illegible]	[illegible]		[illegible]		
FAIRMOUNT STREET		NORTH SIDE								
Samuel Stern	7 641 43	N.E. Fairmount St 83' E.of 6th St 26' x 90'6" L	7¹- 755	10320	5160	2580		2580		00 00
Samuel Stern										00 00
Samuel Stern										00 00
Samuel Stern										00 00
Samuel Stern										00 00
Samuel Stern										00 00
Samuel Stern										00 00
Stephen Fl[illegible] 1333 Pierson St City	643 32	[illegible] 2½	7¹- 764	[illegible]	[illegible]	[illegible]		[illegible]		00 00
[illegible] 1030 Pierson St City	642 37	[illegible] 2½	7¹- 770	62925	31462	15742		15749		00 00
TOTALS CARRIED FORWARD				1593313	797162	329559		329603		00 00

First Half 1939 Tax

CITY of CAMDEN, N.J.
TAX OFFICE DEPARTMENT OF REVENUE AND FINANCE CITY HALL
OFFICE HOURS FROM 8 A.M. to 4 P.M.
SATURDAYS FROM 9 A.M. to 12 NOON
Office will be open on the 15th day of February and May 1.
TAXES ARE PAYABLE
BY ACT OF THE STATE LEGISLATURE, TAXES ARE PAYABLE IN FOUR INSTALLMENTS
Taxes may be paid and credited according to payments made at any time, even prior to the dates fixed as payable.
Interest at the rate of 8% per annum will be added to each installment after February 15, May 15, August 15, and November 15, respectively.

Receipt for Second Instalment — This space reserved for receipt
Receipt for First Instalment — This space reserved for receipt

DO NOT DETACH
Penalty Due After May 1, 1939
1939
7 N.S. Fairmount St
641 83' E.of 6th St
43 26' x 90'6"
7¹- 755
SECOND INSTALMENT
2580 TAX
INTEREST
TOTAL
AUDITED

DO NOT DETACH
Penalty Due After Feb. 1, 1939
1939
7 N.S. Fairmount St
641 83' E.of 6th St
43 26' x 90'6"
7¹- 755
FIRST INSTALMENT
2580 TAX
INTEREST
TOTAL
AUDITED

Plan 7 Block 641 Lot 43
7 N.S. Fairmount St
641 83' E.of 6th St
43 26' x 90'6" L
Samuel Stern

If you do not have your correct mailing address, please send it immediately to: Assessor's Office, Room 339, City Hall, Camden, N. J.

MAKE ALL CHECKS PAYABLE TO CITY OF CAMDEN
PLEASE ENDORSE THIS BILL WITH YOUR NAME BEFORE PAYMENT

PREVIOUS YEAR'S TOTAL TAX	FIRST HALF TAX
10320	5160

NOTICE: Chapter 106 of the Laws of 1902 provides that taxes hereafter shall be paid in four instalments, February 15, May 15, August 15, and November 15, after which dates, if unpaid, they become delinquent.
Each of the first two instalments will be one-quarter of your last year's tax bill.
Proper adjustments, up or down, on this year's tax bill will be made on the two succeeding instalments hereof due

COMPARE AMOUNT PAID WITH AMOUNT SHOWN BELOW
DATE | BALANCE | LOW | DATE | BALANCE | LOW
ABOVE AMOUNT
SECOND INSTALMENT | FIRST INSTALMENT

FIRST HALF-YEAR TAX DUPLICATE AND BILL, CAMDEN

CITY OF CAMDEN

ASSESSMENT RECORD - CITY ASSESSORS

1939

NAME OF OWNER	PLAN BK. BLOCK LOT	DESCRIPTION AND LOCATION OF PROPERTY	ASSESSED VALUATIONS LAND	IMPROVEMENTS	PERSONAL	TOTAL VALUATION	PROOF
TOTALS BROUGHT FORWARD			4531350	5830195	2834850	13196395	00
SO. TWENTY-FOURTH STREET		EAST SIDE					
Rahel F. Garrigan	12-1 1519 41	50 So. 24th St 16'2" x 60'					
William J. Bovaird 138 Wilmer St. Glassboro, N. J.	12-1 1520 85	116 So. 24th St 14' x 57'6"	400	1650	150	2200	00
TOTALS CARRIED FORWARD			4541925	5867920	2836600	13246445	00

13196395

13246445

THE ASSESSMENT ROLL ALSO IS PRINTED BY ADDRESSING AND ACCOUNTING EQUIPMENT

On February 1, say in 1937, work started on the preparation by hand of the tax duplicate for 1938. First the property location, description, size, were filled in, leaving blanks for the name and the valuation. This work continued through the summer months, and in September the first half of the tax amount (equal to one-half of the total tax of the preceding year) was put on the tax duplicate. Meanwhile—for the assessor's duties consist of a number of concentric circles of labor—the assessment figures were being compiled on the current year's book in order to obtain the current year's ratables, and from them the tax rate. Then the 35,000 tax bills were prepared by hand by seven regular employees plus ten or twelve extras employed for eight or nine weeks. These emergency people, as many municipal officials know, were of a highly varying character. Handwriting varied in legibility, and more than 5 per cent of the bills were actually in error; there were mistakes in addresses, names, wards, tax amounts. The extra help cost us $4,000 per year for 70,000 bills, 3,000 of which were in error.

CITY OF CAMDEN --- TAXES 1939

	ASSESSED VALUATIONS LAND	IMPROVEMENTS	PERSONAL	TOTAL VALUATION	A TOTAL TAXES	DEDUCT FIRST HALF TAXES	SECOND HALF TAXES	B FOURTH QUARTER TAX	DATE PAID	C THIRD QUARTER TAX	DATE PAID	PROOF
	78500	145600	13450	237550	1021465	510733	510732	255347		255385		00 00
1	360	1890	150	2400	10320	5160	5160	2580		2580		00 00
6												
7												
8												
9	360	1890	150	2400	10320	5160	5160	2580		2580		00 00
15	4500				23435	11718	11717	5859		5859		00 00
25	4500	9500	650	14650	62995	13749	47246	23623		23623		00 00
	122590	228310	20800	371700	1598313	799168	799151	399558		399599		00 00

Second Half 1939 Tax

CITY of CAMDEN, N.J.

TAX OFFICE — DEPARTMENT OF REVENUE AND FINANCE — CITY HALL

OFFICE HOURS FROM 8 A. M. to 4 P. M. SATURDAYS FROM 8 A. M. to 12 NOON

BY ACT OF THE STATE LEGISLATURE, TAXES ARE PAYABLE IN FOUR INSTALMENTS

Taxes may be paid and credited according to payments made at any time, with interest at three per cent per annum from date of such instalment after February 1st, May 1st, August 1st, and November 1st, respectively.

Receipt for Fourth Instalment — This space reserved for receipt

Receipt for Third Instalment — This space reserved for receipt

DO NOT DETACH — Penalty Due After Nov. 1, 1939 — 1939

DO NOT DETACH — Penalty Due After Aug. 1, 1939 — 1939

PLAN 7 N.E. Fairmount 3½
BLOCK 641 83' E.of 8th St
LOT 43 26' x 98'6"

Samuel Stern

7½- 755

If we do not have your correct mailing address, please send it immediately to: Assessor's Office, Room 329, City Hall, Camden, N. J.

LAND	IMPROVEMENTS	PERSONAL	TOTAL VALUATION	TOTAL TAX	DEDUCT FIRST HALF	SECOND HALF TAX
360	1890	150	2400	10320	5160	5160

FOURTH INSTALMENT: 2580 TAX; INTEREST; TOTAL; AUDITED

THIRD INSTALMENT: 2580 TAX; INTEREST; TOTAL; AUDITED

MAKE ALL CHECKS PAYABLE TO CITY OF CAMDEN

Please bring this bill with you when making payment.

NOTICE: Chapter 366 of the Laws of 1933 provides that taxes hereafter shall be paid in four instalments, February 1st, May 1st, August 1st, and November 1st, after which dates, if unpaid, they become delinquent.

Each of the first two instalments will be one-quarter of your last year's tax bill.

Proper adjustments, up or down, on this year's tax bill will be made at the last two instalments become due.

COMPARE AMOUNT PAID WITH AMOUNT SHOWN ABOVE

DATE	BLOCK	LOT	DATE	BLOCK	LOT
AMOUNT			AMOUNT		
FOURTH INSTALMENT			THIRD INSTALMENT		

SECOND HALF-YEAR TAX DUPLICATE AND BILL, CAMDEN

While the billing was going on, or say from November 15 to January 10, the final valuations for the year were put on the tax roll, which was sent to the County Board, which announced the tax rate on March 15.

The period from January 10 to March 15 was devoted to preparing the tax bill for the second half of the year, all except the amount of the tax. As soon as the rate was available, the amounts were computed by calculating machines and placed on the duplicate and transcribed on the bills, which were mailed June 15.

On June 10 we started to make up the tax duplicate for the next year.

Accessible Assessment Data

An extensive WPA project permitted us to get our assessment and tax records in better shape than they ever otherwise might have attained. This project duplicated the City Engineer's maps and records, placing all our property records on a block-and-lot basis by wards, and coded to agree with the Engineer's plan books. For a certain piece of property, for example, 13-2 means 13th Ward 2nd book; 896 is the block number and 64 is the lot number, both set up by the engineers. For convenience on the Addressograph plates, the description is abbreviated, such as BH & G, meaning brick house and garage. Our assessment data are now placed on an individual card, with a photograph, for each parcel. I was recently asked to furnish an appraisal of a certain property. Instead of visiting the property, I went to our files and produced my estimate within the hour.

Where Does the Owner Live?

Our old method was to mail bills to the address of the parcel, and in 80 per cent of the cases this was not the address of the taxpayer, and in 20 per cent of the cases the bill never reached him at all. Of course, as a matter of law, that was his lookout; but it was not good municipal business practice.

We decided to bill the owner at the place where he lived: so we sent out thousands of return postcards. Wherever possible, we sent the card to the owner; otherwise, to the house, with a request that it be forwarded to the owner or agent—and mostly this courtesy was performed. Addressograph plates were made from the answers received; plates had already been made carrying the description and account number; two plates per parcel, which stamp side by side, as on the tax roll, or may be used separately.

We also wrote to all probable property agents, such as banks, requesting lists of properties and the correct method of address. Some 4 per cent more taxpayers, or parcels,, were thus added to our rolls.

Billing Machines Step Up Tempo

For the extension of the tax on the duplicate and on the bill, we bought five Sundstrand Class D accounting machines. The operation of these machines is so simple that four of the operators are clerks who have been with the city for ten or more years. With these machines the duplicate and bills are now extended together in the same operation. The procedure is as follows:

On August the job of Addressographing the tax duplicate is begun, and as each ward is completed the printed bill forms are run through the Addressograph, which prints name, description and account number on them. This batch of bills and the duplicate sheets are then sent to the Sundstrand operators, who extend the tax data, as shown in the illustration. Mechanically, this is a very simple job. The operator simply writes the total amount of the previous year's tax on the keyboard. The machine automatically divides this amount in half (adding ½-cent to uneven amounts) and prints the amount of the first-half tax, and at the same time divides this amount into two equal installments, which are printed as the 1st Quarter Tax and 2nd Quarter Tax on the stubs of the bill. The tax duplicate in this operation is a carbon of the tax bill. Sub-totals are printed on each page and carried forward to the last page of the book. The machine at the same time furnishes line proof that the amount for each line has been picked up correctly and that the mechanical calculations are mathematically correct. The entire tax accounting and billing job for the first half of 1939 was performed by the same four operators in two months, and we expect to do it in six weeks next time with our regular employees and no extras.

The bills are now sent to the Dexter Folding Machine, which gives them two folds, at the rate of 15,000 per hour, and are then inserted in window envelopes with the Addressographed name and address showing through. Tax collections amounted to 76 per cent in 1938 and will amount to 80 per cent this year. In other years, they had fallen as low as 56 per cent.

Then the work of building up our office assessment record starts. Gone are the days of pencil scrawling, for the new blotter is machine-made and looks it. A 3-minute job of changing bars on the Sundstrand and they are now ready for a new job. Name and descriptions are put on by Addressograph, while the assessments on land, improvements and total are computed by the Sundstrands by January 10, and from these ratables the year's tax rate is computed on or after March 15 by the County Board of Assessors.

The Same Machines Make Water Bills

From January 10 to March 15, these same men now compile the water duplicate and the water tax bills from information supplied by the Water Department.

Then the work for the second-half tax billing of the year is performed. The second-half tax duplicate sheet and the second-half bill are placed in the billing machine, and all the information is placed on them at one time.

The success of this system is due to the simplicity and flexibility of these machines in changing from ledger bookkeeping to tax work and from tax work to water billing in the three minutes required to take out one bar and put in another bar. We now have five machine bars for Sundstrand Class D set-up on these operations; (1) Assessor's roll book; (2) first half-year tax bills and duplicate; (3) second half-year bills and duplicate; (4) water bills and duplicate; (5) general ledger and budget. Beginning July 1, we shall use another bar which will make our machines work on delinquent tax and tax title lien liquidations. Thus the machines are kept busy the year round, the employment of specially trained operators is unnecessary, and all the accounting in the Assessor's, Comptroller's and Tax Offices is done by machine and in positive control at all times.

Boston Takes Fun Out of False Alarms

Decalcomania and Shrieks Do It

By WILLIAM ARTHUR REILLY
Fire Commissioner, Boston, Mass.

SPASMODIC drives against false alarms are not effective. A slow, continuous, steady process of education and warning must be maintained. A five-point program designed to combat the increase experienced early in 1938 was undertaken with some success here in Boston and will be continued during 1939. These measures are as follows:

1. To establish the fact, in case of possible prosecution, that the adult turning in a false alarm was aware of the penalty for so doing, a decalcomania strip was designed bearing an imprint similar to that which is found on mail-boxes, issuing a warning that sounding a false alarm or tampering with the box is punishable by a fine not exceeding $500 or two months in jail. These signs are put onto the fire-boxes, where they will remain during 1939. Thus, no person will be able to say that he or she did not know that it was wrong to sound a false alarm.

2. Mechanical sirens, hand-wound, were placed on certain so-called "bad boxes." These sirens, being portable, could be placed anywhere in the city without great difficulty; since they are operated by a spring which is hand-wound, no electrical interruption in the fire-alarm service is possible, and it has been our experience that wherever these sirens are placed, false alarms have practically stopped. Naturally, to carry out this idea it will be necessary to use a large number of the sirens, because obviously those who are in search of fun will avoid the boxes having the sirens and will take note of the boxes which have no sirens before pulling the alarm. However, the gradual installation of the sirens in certain sections of the city should achieve good results.

3. District chiefs and speakers representing the Fire Department, appearing before women's clubs and parent-teacher associations, emphasized repeatedly that the way to stop false alarms is by parental influence and discipline. We believe such remarks are worth while though children of parents who are interested in parent-teacher activities and women's clubs seldom are given to the sounding of false alarms, for all such speeches by members of the Department serve to awaken and sustain public consciousness that false alarms are a problem requiring attention.

4. Motion pictures bearing the inscription of an insurance company are not permitted in the Boston schools. We plan this year that our Department shall prepare a movie which can be used in the schools. If we are not able to prepare as good a picture as the well-known "Sounding the Alarm," we certainly can produce a Fire Department picture that can serve as a vehicle for a false-alarm message.

5. By means of a daily check-up on the number of false alarms and locations of false alarms, it is possible to telephone the Police Department regarding certain areas in districts which are causing trouble. When Police Headquarters gets in touch with the station covering that district, it puts the officers and men on their toes.

Here are two other preventive measures:

1. The Registrar of Motor Vehicles for the Commonwealth of Massachusetts has assured us that he will remove the license and registration of the owner of any car used in a false-alarm junket.

2. The District Attorney of Suffolk County has agreed to present to the Grand Jury a charge of manslaughter against any person sounding a false alarm as the result of which some fatal accident takes place.

These points were given considerable newspaper notice at a time when we were organizing a committee of vigilantes among the social and civic organizations of the various suburbs. The amount of publicity received had a decided effect on false alarms for a short time; but of course a permanent effect will not be accomplished until some person is charged with manslaughter and with being an accessory to a murder through the sounding of a false alarm, or until enough people lose their driving licenses and registration plates because their children used the family car while sounding false alarms. The cooperation of the judges in the District and Juvenile Courts has been very good, although at times we have been somewhat embarrassed when the judge would say, "Why all the gold braid to prosecute a youngster sounding a false alarm?" However, one youngster who was found to have sounded more than a hundred false alarms was sentenced for a year, and an adult was sentenced for 60 days. The newspaper notices of these prison sentences helped.

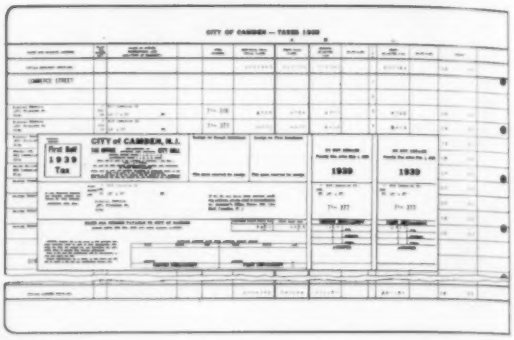
If we can maintain for 365 days each year the activities I have just outlined, we shall have better success than we have had previously by spasmodic drives against false alarms.

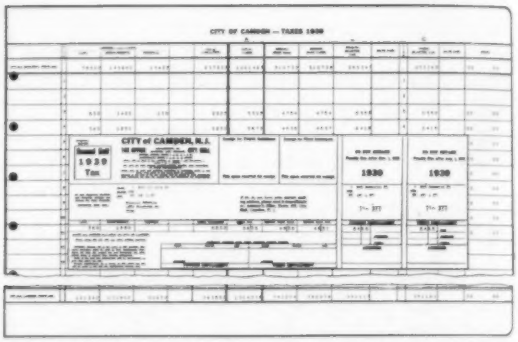
A second article by Commissioner Reilly will appear in an early issue of The American City.

"CAMDEN SOLVES ITS TAX ACCOUNTING PROBLEMS,"

says Mayor Brunner, "With Underwood Elliott Fisher Accounting Machines"

With Sundstrand Accounting Machines





SPECIMEN TAX RECORD SHEETS AND BILLS—*Tax Rolls and Bills are written at a single operation. Automatic multiplications, column totals automatically printed and "carried forward," as well as automatic checks on accuracy, save time, energy and money and make it possible for a small force to do a big accounting job . . . on Underwood Elliott Fisher Accounting Machines.*

"Realizing the need to modernize and coordinate the accounting systems in the Assessor's, the Comptroller's and Tax Offices," writes Mayor George E. Brunner of Camden, N. J., "we selected the Class D Sundstrand Accounting Machine as the equipment best fitted to do all of the accounting in these offices . . . The simplicity, ease of operation, visibility and extreme flexibility, as evidenced by the fact that the equipment can be changed from any one application to any other in less than three minutes, were the determining factors in our selection of your equipment . . . Due to the Sundstrand 10-key keyboard and many automatic features, any of our regular city employees can learn to operate the machines in a few minutes."

Camden, N. J. has followed the lead of many other municipalities and big business organizations in equipping with Underwood Elliott Fisher Accounting Machines. If you have a machine accounting problem, telephone your nearest Underwood Elliott Fisher Branch.

Sundstrand Model Underwood Elliott Fisher Accounting Machines in Assessor's Office, City of Camden, N. J.

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ELLIOTT FISHER ACCOUNTING MACHINES

Public Service Training in New York State Municipalities

A Thoroughly Organized and Well-Functioning Plan

By ALBERT H. HALL
Chief, Bureau of Public Service Training, New York State Department of Education

THE New York State Conference of Mayors established training schools for policemen and firemen on a statewide regional basis in 1928. By 1931, the Conference had expanded its training programs to include twenty functional groups of city and village employees. The Regents recognized the soundness of this work by granting, in 1935, an educational corporation charter for operation of the schools to a group of officers and members of the Mayors' Conference. This corporation, the Municipal Training Institute of New York State, has been empowered by the Governor and Legislature to share in Federal funds for vocational education; 75,000 city and village employees have attended training schools operated by the Conference and the Institute since 1928. Twenty-eight city and village mayors serve as regional representatives of the Institute. They urge fellow municipal executives to send their local employees to Institute schools.

The Regents chartered, in 1935, the Town and County Officers Training School, an educational corporation administered principally by officers and members of the Association of Towns. This corporation is also authorized to receive reimbursement from Federal vocational education funds; 7,970 town and county employees have attended training schools operated by the corporation since 1935.

Large urban centers, including New York City, have developed and operated through municipal departments, associations of municipal employees, and educational institutions, special in-service training courses for groups of municipal employees.

Some in-service training has been developed for state employees. The state departments of Correction, Conservation and Taxation and Finance, for example, have operated programs for employee groups. Several educational institutions have provided extension training for state employees. The school of the Division of State Police has performed outstanding work in training state and local police.

In-service training of public personnel has increased the efficiency of state and local administration. The training programs have developed close cooperative relationships among Federal, state and local employees. The schools are increasing public understanding of the complexity of government work and enhancing the prestige of public employment. Training makes public employees aware of the social importance of their jobs and stimulates them to better their work. Studies have shown that tenure is lengthened by such training. In-service training thus nourishes the merit system and contributes to the development and stability of a career in public service.

The George-Deen Act, passed by Congress in 1936, provides for the further development of vocational education in the states and territories and authorizes the use of Federal funds in the operation of in-service training courses for public employees in states and cities. Such Federal funds must be matched by state or local funds and can be expended only through a state vocational education agency. The Act establishes the principle of governmental responsibility for the training of public employees. It is a recognition of the fact that the training of public employees is at least equal in social importance to the vocational instruction of employees in industry and agriculture. Under the Act, cities, states and the Federal Government enter a working partnership to improve administration at the state and local level.

On December 1, 1937, the Regents established in the State Education Department a Bureau of Public Service Training, responsible for cooperative aid to all interested and competent agencies in the operation, development and coordination of training programs for state and local employees. The Regents also appointed an Advisory Council on Public Service Training composed of the President and Secretary of the Mayors' Conference and Municipal Training Institute, the President and Secretary of the Association of Towns and the Town and County Officers Training School, and Dr. Luther H. Gulick, Director of the Institute of Public Administration. The approved program is published as University of The State of New York Bulletin Number 1140.

In general, the Regents recognize a responsibility to assist in:

(a) Keeping public service training free from the deadening hand of routine administration.

(b) Developing training programs which will facilitate the molding of public service careers.

(c) Meshing pre-employment and in-service training.

(d) Bringing the stimulation of training to the greatest possible number of public employees at the least possible expense.

(e) Providing training for administrative and supervisory officials as well as line employees.

The functions of the Education Department in public service training will be:

(a) To provide general advisory assistance, aid in the development of curricula, teacher training programs and teaching materials, provide teacher-training service, and act as a clearing-house of information on the in-service training experience of New York State, and apprise agencies within the states of in-service training developments in the state and nation.

(b) To extend the scope and usefulness of existing training programs and establish programs for employees for whom no training has heretofore been provided.

(c) Within the restrictions of Federal statutes and the State Vocational Education Plan and the limits of the small amount of Federal monies available for this purpose, to reimburse from Federal funds, on a matching basis, those public agencies, including departments of the state government, departments of local governmental subdivisions and associations of municipalities or their affiliates which demonstrate their capacity to operate and develop sound in-service training programs for state and local employees.

(d) To encourage the growth of in-service training programs initiated, sponsored, directed, and supported by public employees in order to stimulate and maintain effective employee interest in self-improvement.

(e) To assist in the development of public employees as instructors in training programs.

(f) To assist in the coordination of all public in-service training activities within the state and to work with all interested agencies for the elimination of overlapping and duplication of training effort.

(g) To aid all agencies to achieve full cooperative utilization of existing public and private training facilities and resources.

ADDRESSOGRAPH MEANS NO ADMITTANCE TO ERROR, DELAY, WASTE

Municipal officers realize the importance of winning and holding citizen good will. They know that citizen support is lost when errors, omissions, misspelling and illegibility creep into the copying of names and data on bills, receipts, lists and other forms used widely in all departments. Copying this fixed information, one character at a time, by hand or machine, invites errors, and requires checking with original records.

In thousands of offices these slow methods have given way to Addressograph—the most efficient method of handling record copying jobs. The entire record is copied by Addressograph with *one swift motion* . . . with *unfailing accuracy.* Time and money are saved. Procedure is simplified. Peak loads are leveled.

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Treating a Difficult Water in North Central Massachusetts

Athol Uses Combined Alum and Activated Carbon with Lime and Soda Ash Successfully

AN AVERAGE alkalinity of 6, color varying from 30 to 180 and with an average of 60 to 65, makes a water difficult to treat, particularly when you throw in continuous growths of plankton like Asterionella, Tabellaria, and occasional rapid appearances of Anabena and Synura. Athol, Mass., experiences all these and still has produced an odor- and taste-free water with its new filtration plant ever since it was placed in operation June 7, 1937.

Three impounding reservoirs furnish the water for the city. Only two of these are used, for the third, unused for many years, has become overgrown with vegetation so that it would be impossible to treat the water with any economical method. The other two reservoirs are the Phillipston connected to the plant by 10- and 8-inch gravity lines, and the Newton, connected with 16-, 12-, and 10-inch gravity lines.

The Plant

The waters from the two reservoirs are used in about equal quantity and are mixed as they enter the aerator chamber. A U. S. Electrical Motors pump delivers the water to the Aer-O-Mix aerator, and lime is applied below the aerator suction, and alum at the top of the aerator. Three Omega dry chemical feeders control the rate of application of the chemicals, which include soda ash applied to the clear well. The lime is applied at ¼-grain per gallon, and the alum at 1½ grains per gallon. The soda ash at the entrance to the clear well is applied at 1¾ grains per gallon. Blackalum containing 4 per cent activated carbon is used continuously and has been very successful in removing all traces of taste or odor in the filtered water, even when the plant has been called upon to handle some water with high Synura counts, as told later in this article. No chlorine is used for sterilizing the water, since the watersheds are completely controlled by the city and there are no habitations on them.

The flow of water from the two reservoirs is controlled by a pair of float valves which actuate hydraulic valves on the two lines. There are also hand-operated shut-off valves on the line. Ludlow valves are used for all gate-valves throughout the plant.

From the aerator the water flows direct to the settling tanks, which have two baffles, each consisting of 2-inch plank with 1-inch holes on 4-inch centers. These baffles give a uniform flow through the tanks and prevent short-circuiting. The tanks are divided into two separate sections which are operated in parallel. It is possible to clean either and leave one in service, but thus far both have been cleaned at the same time at about six-month intervals. The detention period is about four hours.

The plant is built with space for three ¾-mgd filters, but only two are equipped for use at present, making the plant a 1½ mgd unit. The filters are equipped with Wheeler filter bottoms having 3-inch porcelain bells at the bottom, then 18 inches of graded gravel and 30 inches of sand. Two steel wash-water troughs in each filter run from front to back and are 24 inches above the top of the sand and have 24 inches of water over them, making 4 feet of water over the sand. The filter runs are from 14 to 16 hours, the longest about 23 hours. The floc remaining in the water carries rather sticky material, so that each time the filters are drawn down for washing, the sides of the filters and the wash-water troughs are hosed down with high-pressure water to thoroughly clean them.

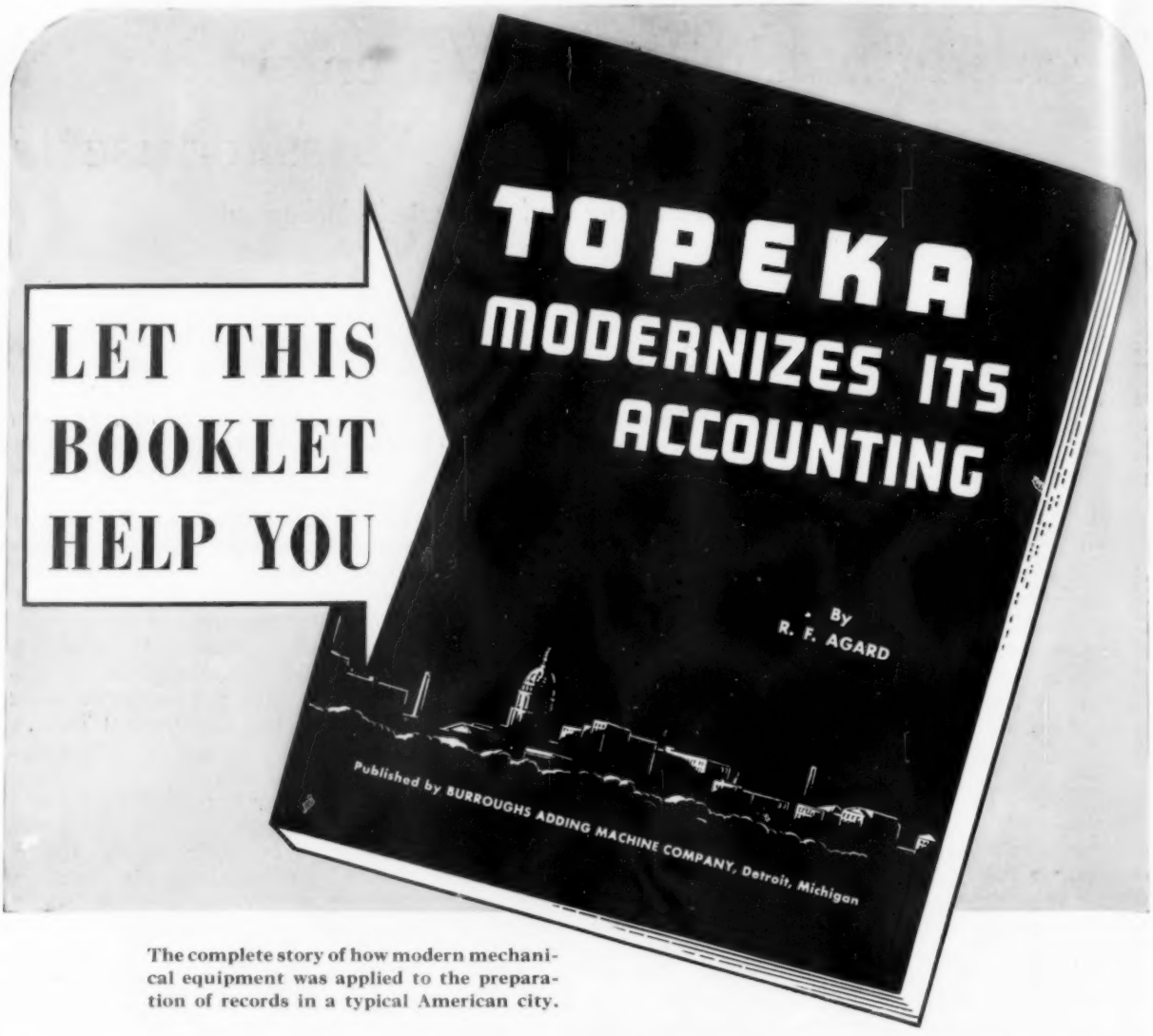
Each filter is equipped with a Norwood operating table with hydraulic control and Builders Iron Foundry indicating and recording loss-of-head and rate-of-flow gages. On the operating floor are two other helpful gages, a Norwood wash-water pressure gage and a Builders Iron Foundry float gage on the clear well.

On the basement floor level are the pipe gallery, open for easy access, and the various pumps. The distribution system in Athol is divided into three sections, each of which is fed by gravity but to two of which it is necessary to pump the water from the filtration plant. A 250,000-gallon standpipe supplies part of the town, and the Pleasant Street reservoir, an open storage basin of 1,750,000 gallons capacity, supplies another section, and the downtown section is supplied by an open storage basin of 1,750,000 gallons located at the plant.

A Worthington turbine-driven pump of 110 gpm capacity is driven by the water entering the plant from the Phillipston reservoir through the raw-water line. This pump delivers the water to the Pleasant Street reservoir. A Crosby pressure gage mounted on the wall at the pump shows the pressure on the line to the reservoir, and two red pointers show the limits of pressure allowed.

Two Worthington centrifugal pumps with 3-hp Westinghouse motors are used to pump water from the Pleasant Street line to the standpipe. One is held as a reserve unit. A standby pump for the Pleasant Street line is provided by the installation of a Worthington centrifugal with a 5-hp U. S. Electrical Motors motor. A 2700-gpm Worthington pump with a 30-hp U. S. Electrical Motors induction motor takes water from the clear well for washing the filters.

In the basement is located an H. B. Smith steam boiler with a Timken oil burner and Minneapolis-Honeywell control for heating the building through Modine unit heaters. A radiator is installed in the laboratory and office. The laboratory is equipped for the standard chemical and physical tests but not with bacteriological equipment. A Phipps & Bird four-unit stirring device permits easy determination of coagulation results.


LET THIS BOOKLET HELP YOU
TOPEKA MODERNIZES ITS ACCOUNTING
By R. F. AGARD
Published by BURROUGHS ADDING MACHINE COMPANY, Detroit, Michigan

The complete story of how modern mechanical equipment was applied to the preparation of records in a typical American city.

When the City of Topeka decided to redesign and modernize its accounting, the problem of mechanizing the new system was an important one. A comparison of machines and machine features led to the selection of Burroughs equipment. This 72-page booklet clearly describes how this equipment is employed to simplify the keeping of Topeka's records, and to make them immediately available when required. Included are forms, illustrations of typical entries, financial and statistical reports—giving a complete picture of the accounting system. While the details will not apply to every city, the principles can be applied to any city's accounting.

Ask your local Burroughs representative to review the booklet with you. Call the local Burroughs office, or, if you prefer, mail the coupon.

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I would like to see your new booklet entitled "Topeka Modernizes Its Accounting."
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Burroughs

The chemicals for the plant are delivered by truck and unloaded direct into the chemical room, where the dry feed machines are located. Space is at a premium, permitting the storage of only 4 tons of chemicals at a time, but there is ample room for the construction of a larger storage space if it is ever required. The chemicals are received in bags, which are stored on wooden racks or platforms to keep the chemicals from any dampness on the floor.

The superintendent has developed a neat device for the removal of the small mud balls that have appeared from time to time on the filters. It consists of a flat scoop about 12 inches long to which fine teeth have been welded or brazed, and the scoop is connected to an ejector operated by water from a nearby hydrant. It cleans out the mud balls in a shorter time than it requires to rig up the device.

Chasing Odors

The reservoirs of the system are treated with copper sulphate regularly during the season of maximum growth of plankton. There are times, however, when the algae growths have been bad and it was impossible to treat the reservoir. The Phillipston reservoir had a heavy growth of Synura in mid-February, 1938, when the reservoir was covered with ice. The ice was not strong enough to permit men walking on it, and there was just too much ice to make the use of a boat safe. There was a delay of six weeks before the regular copper sulphate treatment could be applied, and during this time the activated carbon in the Blackalum carried the load with no appearance of odors in the treated water.

During those six weeks the Synura counts increased rapidly and the odor of the raw water was distinctly bad, but the odors were removed by the normal amount of Blackalum, no additional amounts being added to care for the increasing odors.

The average use of water in Athol is 500,000 gallons and the population is about 12,000. Most of the manufacturers use river water without treatment for their plants and use city water only for drinking purposes. The designing engineers for the plant were Tighe and Bond, of Holyoke, Mass., and the plant is operated by Henry Cormier, Chemist in Charge of Filtration. Frank P. Hall is Superintendent of the Athol Water Department.

T. R. K.—904.

Street Paving and Repairs in Fort Myers

An Interview with Fred Lowdermilk, Superintendent of Public Works

THERE are 119 miles of streets in Fort Myers, Florida, only 21 miles of which are paved. The paving used in the past consisted chiefly of vitrified brick, asphalt block and Warrenite on marl and shell bases, some surface-treated streets, a little concrete, and now a rapidly increasing mileage of mixed-in-place roads. The bases under the old surfaced streets are 7 inches thick on a sand subgrade.

When utility cuts are made, the bases are replaced somewhat thicker than the original bases, and the same type of pavement is used to replace the torn-up surface. "We don't believe in making our pavements look patched if we can help it," said Mr. Lowdermilk.

A Typical Mixed-in-Place Job

Mr. Lowdermilk is enthusiastic over the service that mixed-in-place pavements can give to the smaller and less affluent cities. He offers the following description of a typical job on an old 16-foot street with a sand subgrade and a 6½-inch compacted shell base.

The old street was first plowed 12 inches deep, starting at the center and working to the side, and the whole pulled to a crown with a 12-foot blade pulled by a Caterpillar tractor. This material is then cut with disks until the shell and clods are thoroughly pulverized and mixed. The mix ic shot with 85 penetration cut-back asphalt using ½-gallon per square yard and the asphalt cut in with the disks. The mixing with the disks and shooting is repeated three times, and then a blade is put on and the mix split to the two sides. This working has taken care of the top 4 or 5 inches of the old material.

The bottom material is then shot and mixed twice with the disks. This is followed by further mixing with the multiple maintainer pulled by the Caterpillar Sixty, and final blading into a single windrow in the center of the street. This windrow is broken down and mixed again with the multiple blade maintainer and finally shot again with another 0.5-gallon of the cut-back and cut into two windrows at the sides with the blade. This makes approximately a 4-gallon treatment for the entire road.

The top and bottom windrows at the two sides are then broken down together with the maintainer, shaped and finally shot with another 0.5-gallon of the asphalt, mixed with the disks and bladed back and forth until the cut-back is thoroughly mixed and cured. Mr. Lowdermilk stressed the need for doing the work when the materials are entirely dry. If they are caught with the material partially mixed when a shower comes up, the street is not shot with cut-back until the water has been thoroughly dried out by disking and blading.

Following the shaping, the road is 20 feet in width and rolled with an 8-ton tandem roller. The edges are trimmed to line and the surface allowed to stand 90 to 180 days under traffic before sealing with 0.2-gallon of the cut-back. Cochina shell is used as a blotter with about 15 pounds per square yard, or about ⅛- to ¼-inch thick as spread by hand. This surface stays gray for a considerable period, but gradually under traffic it becomes a typical asphalt black top surface with distinct non-skid qualities.

A later article will describe the work Mr. Lowdermilk has been doing with the raw water-gas tar from the municipally owned gas plant in the creation of new streets at unbelievably low cost.

T. R. K.—810.

A REAL MOTOR GRADER FOR ONLY $2000!

NOTHING keeps unimproved streets and alleys in shape as well and as economically as a motor grader and here is a machine that any town can afford to buy. Costing from $1,000 to $2,000 less than you might expect to pay for a motor grader this machine does a real job of street and alley maintenance and can be used also for shaping and maintaining drives in golf courses and parks and for preparing municipal playgrounds and airports. A snow plow is available for keeping streets cleared of snow during the winter months.

Mail the attached coupon today for complete descriptive folder. J. D. Adams Company, Indianapolis, Indiana.

The No. 20 above is scarifying an old gravel street preparatory to reshaping. You will be surprised at the amount and variety of work these machines will do for you.

ADAMS
MOTOR GRADER
NUMBER 20

J. D. ADAMS COMPANY, Indianapolis, Indiana

Gentlemen: Please send me complete descriptive folder on your Adams Motor Grader No. 20, which you recommend for street and alley maintenance.

Name .....

Title .....

Address .....

Dirty Drinking Glasses May Carry Vile Diseases

Bridgeport, Conn., Health Officer Wages Strenuous Campaign in Restaurants

TWO friends of Dr. Richard O'Brien Shea, Health Officer of Bridgeport, contracted syphilis. After a thorough investigation, Dr. Shea was convinced that the disease was acquired from contaminated drinking glasses. Thereupon started a clean-up and wash-up campaign in Bridgeport that caused the city's 725 eating and drinking places to spend more than $50,000.

The campaign, which reached its height during the spring of 1938, involved the bacteriological testing of more than 1,000 utensils. Actually, the sanitary reform began in February, 1937, according to *The Bridgeport Herald*, when Dr. Shea first decided that there was a definite relation between dirty drinking glasses and the two cases of syphilis. Embree Jaillite tells the story of the campaign in the *Health Officers News Digest*, from which this material is taken.

Health Ordinance Strengthened

The first step upward involved passing an ordinance to tighten the Health Department's hold on eating places. This was done, and from then on, the charge was made that Dr. Shea was "in cahoots" with the makers of sterilizers and paper cups. This didn't bother him; he just went ahead with his plan to make dining in Bridgeport safe.

The road to sanitation, the Health Department discovered, is sometimes thorny and always devious. When the sampling of glasses started, in October, 1937, a bacteria count of 250 was allowed per rim on each glass. That is, if a glass rim had 250 bacteria or less, it was considered safe to use. Beyond this number, the offending proprietor would be summoned by the Health Department.

Proprietors Summoned

In all, about 200 proprietors were summoned to the health laboratories and shown microscopically what constitutes a dirty glass. Nearly always present were the incriminating organisms of B. coli, Staphylococcus, Streptococcus viridans, Streptococcus hemolyticus, and others with equally impressive names. Nearly every proprietor tutored by inspectors was able afterward to produce a sterile glass. Some could not or did not want to go to the trouble, or for other reasons installed paper service. Two chose to fight out the issue in court. Both lost and each paid a $25 fine and court costs.

Some Strange Situations

The owner of one soda fountain felt that he was being picked on, yet on the rim of the sample glass the bacteria were too numerous to count.

A bar owner, when told what it meant to have glasses with 11,700 bacteria inside the rim and 3,500 bacteria outside, indignantly fired his bartender. It saved the owner's face, although the bartender had only observed the usual dishwashing formula. Twenty-two thousand bacteria on the inside rim of a washed glass was more bacteria than the proprietor of a soda fountain could stand. In despair he equipped his place with paper service throughout.

Then there was the proprietor who was doing apparently all that he could to secure the approved results. Yet his glasses continued to show outrageously high bacteria counts. An inspector uncovered the trouble when he saw that the dishwasher picked up the cleaned glasses with his hands cupped over the rims.

For one owner at least, the Health Department drive had tragic consequences. Although a sample utensil tested low bacterially, the proprietor's habits, in the Health Department's opinion, rated lower. His place was padlocked in the interest of public health.

How to Clean a Glass

Getting a clean, disinfected glass to look clean was an obstacle without much significance but of some importance. To the general public a cloudy glass, however clean bacterially, is less desirable than one that looks clean but may actually be bacterially dirty. Soap and detergents of all kinds were experimentally used, until it was found that cloudiness could be overcome by adding borax to the rinse water. The soap was cut and the air-dried glass then emerged shining and visibly clean.

The Cost to Owners

Naturally, the customers of the various eating places approved of the clean-up campaign, but many of the proprietors who had to install sterilizers costing from $250 to $650 did grumble. About 200 of the proprietors felt it would be cheaper to install paper service and did just that. Some of the old-time proprietors couldn't understand why the old way of dunking and dousing was not as good as the newfangled sterilizers. Others felt the sterilizers a good thing but a lot of trouble. On the whole, though, the great majority of the proprietors favored the program, feeling that the Health Department would not be doing it if it were not for the best. Not one, when questioned, complained of the cost, and the reason is quite obvious: sterilizers are bought on terms as low as 50 cents a week, a sum so small that it is an unlikely hardship on any going concern. Indeed, some proprietors have successfully capitalized cleanliness. At the time the disinfection rules went into effect, the advertised fact that it provided only sterile utensils brought to one place a fifty per cent increase in sales.

"By rule of thumb", cast iron pipe was produced more than two centuries ago for underground mains which are still in service. In those times, the science of metallurgy was practically unknown. Today, in one of the finest foundry research laboratories in the world, all the modern controls known to metallurgists guard the quality of cast iron pipe made by this Company. U.S. Super-de Lavaud centrifugally-cast pipe far exceeds the old-time product in characteristics that make for long life and economy.

U.S. cast iron PIPE

Centrifugally or pit cast—for water works, gas, sewerage, drainage and industrial service.

U. S. PIPE & FOUNDRY CO.

General offices: Burlington, N. J.

Foundries and Sales Offices throughout the U. S.

Forward Steps

Reported by Municipal Officials, Chamber of Commerce Executives, and Others

Court Decision Clears Way for Garden Towns in California

SAN FRANCISCO, CALIF.—A decision* of great importance to the unemployment problem was handed down November 28, 1938, by the California Supreme Court. The Court ruled that the under-populated, irrigable lands within many of our irrigation districts, which absentee or other owners have allowed to remain tax-delinquent longer than the three-year period allowed by law for redemption, became the absolute property of the irrigation district. The districts can either resell such lands at public auction, or may rent them and collect the *full economic rent*, for the support of the community. The Court also ruled that the districts, being agencies of the state, must hold and administer the lands as a public trust, that all the functions of the districts are governmental, and that such land, when owned by the districts, is in effect land owned by the state.

By this decision, the Court has made immediately available tens of thousands of new farm and orchard homes, lands which can now be rented very reasonably by home-seekers who have not a substantial amount of cash to buy the land they require, or who prefer not to sign a heavy mortgage which they may or may not ever be able to pay.

Any mortgage that stood against these lands is wiped out when the district forecloses for non-payment of taxes due it, and the indebtedness formerly against these lands has already been cut by many millions of dollars through this process. This brings the cost of the land down to home-seekers and will enable them to devote more of their earnings to better homes and improvements to their land, improvements which are not taxed by any California Irrigation District.

This decision by the Supreme Court clears the way for scores of new garden towns and self-help cooperatives in California without any cost to the general taxpayer, a welcome change from the usual relief proposals. With reasonable direction and advice by state authorities, here is a timely and concrete opportunity to extend an encouraging hand to thousands of families now dispossessed and homeless.

J. RUPERT MASON.

* *Provident Land Corp. v. Zumwalt*, 96 *CalDec* 497; *Moody v. Provident Irr Dist* 96 *C. D.* 512; *ElCamino Irr Dist v. El Camino Land Corp.* 96 *CalDec* 505; *Clough v. Compton Deleven ID* 96 *CalDec* 509, all decided Nov. 28, 1938.

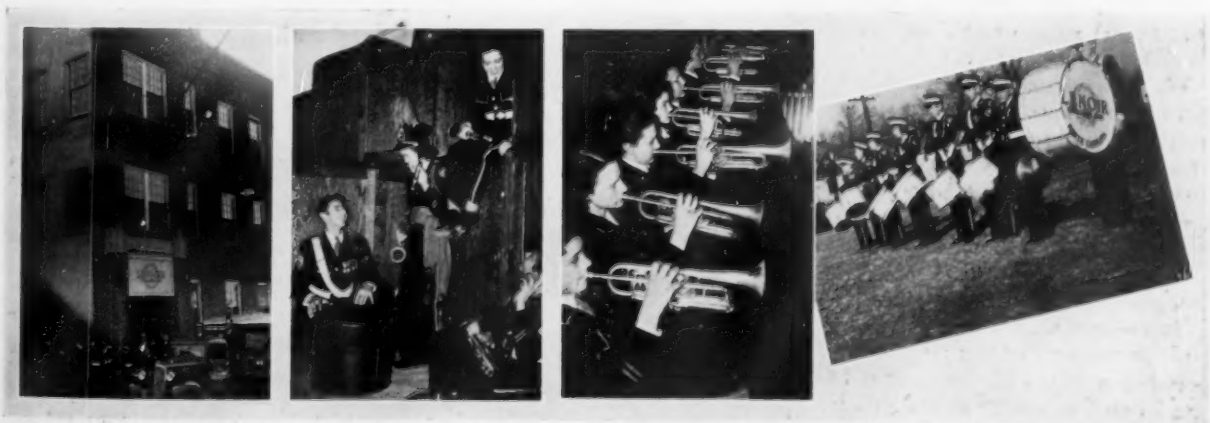
Lenoir Has a Band

LENOIR, N. C.—Other high schools have a football team. Lenoir has a band. With a student-body of around 450, Lenoir's High School band enrolls 130, and there is a constant waiting list of about 200 students who want to play in the band. On the basis of its enrolment, Lenoir should compete as a "Class B" outfit. Since 1928, it has scorned to accept this waiver, and has insisted on competing against big city schools. Its prowess is now so acknowledged that in the 1939 band contest it will not enter the state contest at all, but will be eligible to go direct to the southern regional contest without the necessity of winning first place in the state.

The story of the South's most unusual High School band is largely bound up in the accidental careers of a banker and an absconding bandmaster. James C. Harper, a banker who "fooled with a fiddle," came to Lenoir to make furniture. The local Legion band was scheduled for a concert one night, and at the last moment it was discovered that the director had disappeared. Harper was no bandsman, but he enjoyed a vague reputation as a musician, and so he was drafted to lead the band. Later, when the Legion band disintegrated, the local post rather desperately willed its instruments to the High School, at that time without a band. Harper followed the instruments to the High School, and became so interested in his avocation that he quit making furniture and accepted a job as full-time band director. That was in 1924. Pretty soon Lenoir began to realize that its band was going places.

Now the Lenoir High School band has 130 members, and membership is so prized that any loafing on practice is dangerous business. It has a full-time director, a librarian, a secretary and two instructors—all except the director paid from private subscriptions. It has a $40,000 three-story plant, especially designed for its purpose, with its soundproof practice rooms, its assembly room, a glee-club room, a two-way audio system, a substantial library, a repair shop, a "make-up" room, and locker rooms. The building is debt-free, and all paid for by Lenoir citizens.

The band has other things. It has its own trade mark, duly registered. It has two large buses and an instrument truck for transportation to the many festivals, football games and other events for which it is continually playing. It has a wardrobe and property department, and no less than 35 volumes in its scrapbook



LEFT TO RIGHT: HIGH SCHOOL BAND BUILDING, LENOIR, N. C.; PUTTING THEIR HORNS AWAY IN THE INSTRUMENT LOCKER ROOM; A PRACTICE PERIOD; DRUMMER BOYS—AND DRUMMER GIRLS

Ewing Galloway

Underwood & Underwood

"TO CRANK or NOT TO CRANK?"

(That is the Question)

THE answer is obvious!

MANUALLY OPERATED METERS require, in addition to the insertion of a coin, the turning of a handle or crank to start operation.

Remember the days when motor cars had to be cranked? Back in the DARK AGES—that was.

KARPARK AUTOMATIC METERS relieve the motorist of all effort . . . save time . . . avoid soiled hands (or gloves) . . . and eliminate "chiseling" through failure to turn handle. Operation starts automatically the instant the coin is inserted. Men prefer them. Women—who constitute at least 50% of the parking public, hail these "thoroughbred" meters with joy.

GRAYBAR ELECTRIC CO., who for 70 years has distributed high-grade products, guarantees KARPARK METERS and distributes them from 83 cities in the United States.

Write or wire The Karpark Corporation for a detailed explanation of what KARPARK will do for your city—DO IT TODAY!

SURVEY OF METERS FAVORS AUTOMATICS

60 Cities File Reports in Peoria, Ill., Check

A survey of 60 cities by the Association of Commerce of Peoria, Ill., today found that "no unfavorable comments were received concerning automatic meters," but "several unfavorable comments about hand-operated meters."

Zanesville, O., was cited as receiving "much objection from city officials against manual type of meters" in its own study, and "none where automatics had been in use."

The problem of manual meters in Pocatello, Idaho, included mechanical trouble and failure of motorists to turn the handles completely, according to the Peoria survey. Watertown, N. Y., reported to the association that manuals "freeze during a sleet storm"; Fairmount, W. Va., that manuals "need constant repairing" and Sioux City, Ia., that manuals are "not so good as automatic" in trial installations of both.

—From Cleveland Press, Jan. 12, 1939

Portland, Oregon, installed 1434 AUTOMATIC parking meters 11 months ago.

The Portland Traffic Engineering Survey states that, "Parking Meters out of order and required service . . . 3/10 of 1%."

THE KARPARK CORPORATION
420 Lexington Avenue · New York, N.Y.

library. To belong to the senior band of 90 members is like belonging to the varsity, for this is the group which perennially loads into buses and goes to far-away exciting places.

During the depression, a legislative act severely curtailed school expenditures, cutting out all extra-curricular subjects (including public music), and prohibiting local tax levies for such purposes unless communities voted levies upon themselves. In a dozen North Carolina cities, these supplementary tax levies either were defeated quickly or, as in a few cases, won by a handful of votes.

In Lenoir a special election was called, and voters flocked to the polls. By ten o'clock on election day, it was apparent that the schools had won by a landslide—the most impressive school victory of the times in North Carolina.

There had been one big issue: Shall Lenoir back its band?

Lenoir had voted YEA!

NORTH CAROLINA DEPARTMENT OF CONSERVATION AND DEVELOPMENT.

Outstanding Developments in a Small Texas City

BRYAN, TEXAS.—The resignation of R. G. Williams as City Manager of Bryan, Texas, to take over the engineering work on the new $500,000 city water-works project which has just been approved, has brought to public attention many improvements and advancements made by the city during the eight years in which he has been in charge of municipal activities.

Since August, 1930, when Mr. Williams assumed the position of City Manager, there have been many extensions of public utilities, the city has expanded its limits, the tax rate has been systematically reduced, and the city-owned utility plant has been vastly improved.

Probably the outstanding developments in recent years have been the extension of the sewer system by approximately 12 miles of line; construction of new disposal plants on both the east and west sides of the city, and extension of city light service by constructing about 10 miles of new line. Some 15 miles of new water mains have been laid. Street lamps have been placed at practically every intersection in the city.

A large wing has been added to the elementary school on the west side of town, and a new $300,000 building has recently been completed and is being used for the first time this fall by a rapidly growing high school. Students from the entire county attend this school, several buses bringing in the pupils each day. The former high-school building has been made into a junior high school, relieving congestion in both elementary and high schools.

The dirt streets have been graveled and, when the present program has been completed, 28 miles of such streets will be greatly improved. Much of the mileage has already received asphalt topping, and all will be eventually treated in like manner.

The city has taken an active part in the rural electrification program, and supplies power for a 290-mile distribution system boasting nearly 700 customers. This line was built with a loan from the REA amounting to $256,000. The loan was made for a 20-year term, but recent checking of accounts shows that at the present rate of income the loan will be retired in 17 years.

The area of the city has been increased by nearly 12 per cent, the new additions representing rapidly growing sections. Being located within five miles of the Texas Agricultural and Mechanical College, which is also state headquarters for the Agricultural Adjustment Administration activities, this city has taken care of much of the overflow population, and has enjoyed steady building activity. New residential additions which are most attractive and ideally plotted have been opened, and several have been included in the city limits.

Lower Rates Increase Utility Earnings

In 1930 the domestic electric light rate ranged from 14 cents to 6 cents per kilowatt, while today the scale is from 10 cents down to 2 cents. The commercial rates have likewise been reduced, coming down from a top of 15 cents to one of 8 cents. The reduction in rates has caused a substantial increase in consumption, which, together with an increase in the number of consumers, produces a greater revenue than the previous higher rates. Net earnings for 1937-38 were $70,000, and it is expected that for the present fiscal year they will run to nearly $100,000.

The assessed valuation for 1930 was $5,575,000, with a tax rate of $1.85 per $100 valuation for all purposes. In 1932 the valuation was cut to $4,504,000, and at present it is $5,550,000. The tax rate has been consistently reduced from $1.85 to the present rate of $1.34 per $100 for all purposes.

The bonded indebtedness has also been reduced, dropping $217,000. The 1930 figure was $ 8,500, and on October 1, 1938, it was $268,500.

Various other improvements have been made in the city's various departments. A new 1,000-hp diesel engine was installed in the power plant, and a new cooling tower was erected, representing an outlay of more than $60,000. The police force has been enlarged and the personnel uniformed. New and late design equipment has been added to the Fire Department, which already was right up to the minute.

The Carnegie Public Library has been modernized and the book allowance increased. Other improvements have been made in various departments.

The new water-works construction program, of which Mr. Williams will be the engineer, will be financed by a PWA grant supplemented by revenue bonds issued by the city for the Water Department. The project will represent an investment of approximately $500,000. A tract of land has been bought and tests made show that water of "almost unbelievable purity" has been found in unlimited quantity. Several wells will be sunk, and the water piped the two or three miles to the city with a double pipe line.

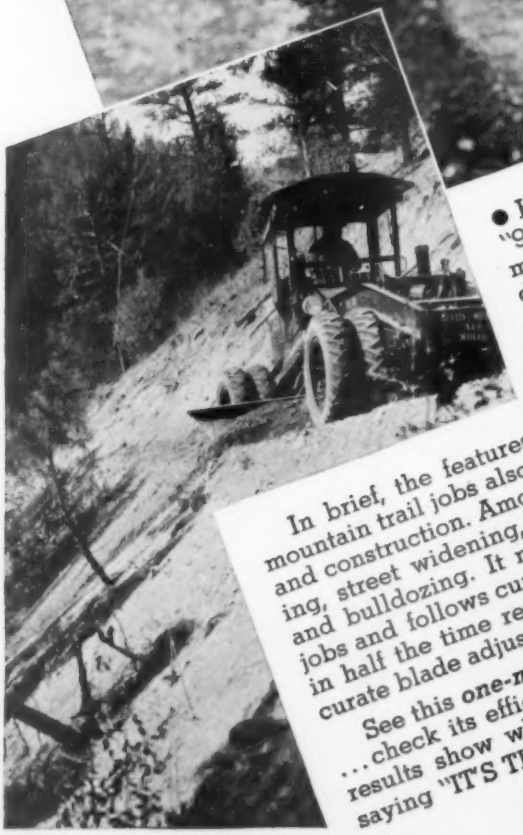
Before coming to Bryan to assume duties as City Manager, Mr. Williams was connected successively with the New York State Highway Department, the U. S. Bureau of Public Roads, and the Texas Highway Department. He is a director of the International City Managers Association and has just retired as President of the Texas League of Municipalities, which represents 292 Texas cities.

W. C. VANDERWERTH.

LEVELING A LAKE MICHIGAN BEACH

An Allis-Chalmers tractor and Drott bulldozer filling with sand the hollows formed by the winter waves on the beach of Lake Michigan at Milwaukee, Wis.

THE MOUNTAIN TRAIL FAVORITE "GOES TO TOWN"



● Here are a few of the reasons why the A-W "99" Motor Grader really "goes to town" for municipal street superintendents. Its four-wheel drive and steer provide so much extra traction, driving power and maneuverability that, *single handed*, it economically cleans up a variety of construction and maintenance jobs that ordinarily call for a battery of varied equipment.

In brief, the features that make the "99" a *must* machine for many mountain trail jobs also makes it a *standout* for urban street maintenance and construction. Among the jobs a "99" takes in stride are heavy scarifying, street widening, shouldering, maintenance, oil mix, snow removal and bulldozing. It negotiates the frequent sharp curves of urban street jobs and follows curving ditch lines without backing up. It turns around in half the time required with a conventional motor grader. It makes accurate blade adjustments without stopping.

See this *one-machine* construction and maintenance handler in action ... check its efficiency and economy on your various types of work. The results show why street superintendents from Maine to California are saying "IT'S THE '99' FOR '39."

The AUSTIN-WESTERN ROAD MACHINERY CO.
AURORA • • ILLINOIS

Motor Graders	Crushing and Screening Plants	Motor Sweepers	5-Yard Tractor-Scraper
Roll-A-Planes	Washing Plants	Shovels and Cranes	6-Yard Tractor-Scraper
Rollers	Blade Graders	Bituminous Distributors	8-Yard Tractor-Scraper
Snow Plows		Elevating Graders	12-Yard Hydraulic Scraper

Survey and Improvement of City-Owned Buildings

MINNEAPOLIS, MINN.—Allocation of almost $11,000 of Federal WPA funds to finance the first complete survey ever made of city-owned public buildings in Minneapolis has been announced by H. L. Richards, Minneapolis District Works Progress Administration director.

At the same time, Director Richards announced that approximately $51,000 WPA money had been allotted for the continuation of repairs and improvements to the city hall - court house and the municipal auditorium.

The building survey was begun November 21. Some twelve persons will be employed in making the survey, which will include fire and police stations, bathhouses, tool-houses, oil plants, Water Department buildings, Sanitation Department buildings and the auditorium.

Fred T. Paul, City Engineer, who is acting as agent for the sponsor, has reported to WPA that there are more than 100 city-owned buildings in Minneapolis for which the Engineering Department has no record as to type of construction, use to which put, or condition of repair.

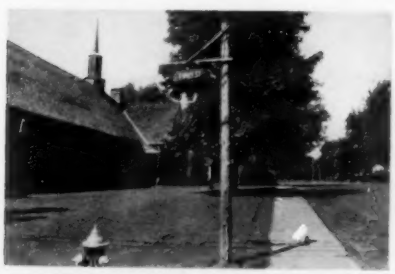
Project workers will make complete floor plans, give use, and full details as to condition of all buildings, Mr. Richards said. A. M. Larson, City Architectural Engineer, will be project supervisor.

Completed plans, the sponsor reported to WPA, will assist the Engineering Department to modernize and maintain the buildings without the necessity of making individual surveys.

The city hall - court house and auditorium remodeling and improvement are being carried on under a previously approved city-wide public building project, under which $220,768 is to be expended.

Ornamental Wood Poles

NEW PALTZ, N. Y.—Next time you drive through New Paltz, take notice of the wooden posts which carry the street name signs. They were not made by our company, but whoever thought to install them merits commendation, for they make the whole town more attractive.



CEDAR POST MAKES RUSTIC STREET SIGN, NEW PALTZ

Our business is very largely in crossties, poles, piles, and dock timbers; but our treating plant at Nashua, N. H., has had experience in making ornamental posts of native Norway pine, a very interesting wood to work with.

J. M. IRVINE,
The Wood Preserving Corporation,
New York.

What the Average Homeowner Pays in Taxes

AMONG the pioneers in informing local taxpayers of the cost to them of various services financed out of their tax payments, was the Board of Assessors of the city of Detroit. In the opinion of Kenneth J. McCarren, member of that Board, actual figures for homes having various assessed values are more understandable to the average property owner than are percentages of the tax dollar.

In a short article and chart recently reproduced in a bulletin of the National Association of Assessing Officers, the Detroit Board of Assessors gives the cost figures for municipal service paid in taxes by fifteen different classes of homes, ranging in assessed value from $1,000 to $15,000. Taking a $4,000 assessed valuation* as representing the average home, the chart shows that such a homeowner pays $107 in taxes for the fiscal year 1938-39, and that the annual cost to him is as follows for the services listed:

Art Institute	.20
City Plan Commission	.04
Contingent Fund	.59
Education	24.82
Fire Protection	7.75
Garbage—Removal—Disposal	1.60
General Fund	3.57
General Road Fund, Street and Alley Cleaning, Snow Removal	8.06
House of Correction	.16
Library	1.76
Motor Transportation	1.21
Parks and Boulevards	1.31
Pensions—Fire, Police, Employees	1.87
Police Protection	14.74
Public Building Maintenance	.47
Public Health	2.45
Public Lighting	1.05
Public Sewer	2.48
Public Works	.49
Purchasing	.15
Receiving Hospitals	1.74
Recreation	.84
Sinking-Fund and Interest	19.62
Welfare	9.76
Zoo	.26

Not listed above are the self-supporting items, which include:

Building and Safety Engineering
Housing
Markets
Recorder's Court
Street Railways
Water

Listed as costing the average homeowner only a fraction of a cent per annum are:

Belle Isle Bridge
Public Entertainment

The General Fund item, costing the average homeowner $3.57 per annum, is subdivided as follows:

Airport	.03½
Assessors	.59
Auditor General	.13
Civil Service	.13
Clerk	.06
Common Council	.13
Controller	.48
Corporation Counsel	.23
Elections	.82
Mayor	.04 2/3
Traffic Engineer	.05
Treasurer	.68
Miscellaneous	.20

Mr. McCarren's statement concludes: "There is one thing a city government should not neglect, and that is, to advise its citizens from time to time on what the government is doing and how much it actually costs. We believe that government should be sold the same as any other commodity, and the city of Detroit is attempting to do just that. A copy of a chart, such as the one described, enclosed with each tax bill, would solve many municipal mysteries for thousands of taxpayers, dissipate the half-baked arguments of "tax quacks," instill in the people confidence in government, and aid tax collections immeasurably."

A Graphic Presentation from Louisville

A leaflet dated January 1, 1939, prepared by the Department of Research and Service of Louisville, Ky., presents 8 pages of interesting information to the taxpayers of that city. The annual cost of all municipal services enjoyed by a homeowner whose property is assessed at $5,000 is shown to be $119.50. A graphic itemization of the weekly costs is given on the page here reproduced.

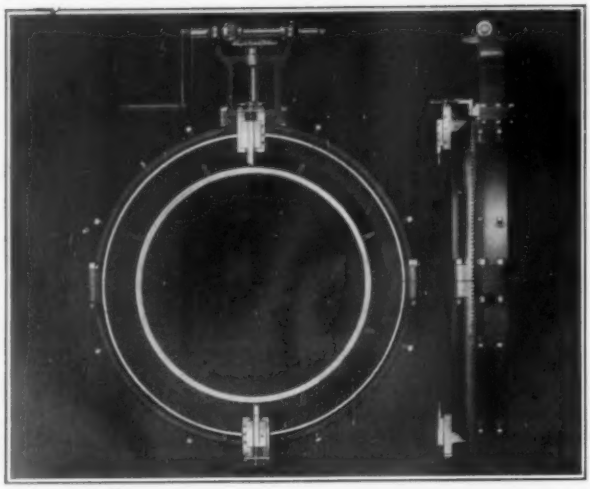
LOW COST OF PUBLIC SERVICES

With our current tax levy of $2.39 one will pay on a home assessed at $5,000.00 a total of $119.50 for all municipal services enjoyed throughout this year. The itemized cost per service is nominal indeed

	Per Week	
Education	$0.76	Price of a pair of silk hose.
Police Protection	.21	Less than a movie ticket.
Fire Protection	.16	Average price of a light globe.
Garbage Collection and Street Cleaning	.09	Less than a Sunday paper.
Street Repair	.07	Less than a car token
Street Lighting	.07	Less than a soda water
Recreation and Parks	.07	Price of a loaf of bread
City Hospital	.12	Less than a quart of milk.
Health Department	.04	Less than a Coca-Cola.
Debt Service	.17	Less than a gallon of gas.
Relief	.14	Less than a package of cigarettes.
Other City Activities	.40	Price of a hair cut.

$2.30 per week — 52 weeks — $119.60 per year.

* For similar figures for a $5,800 one-family home in New York, see THE AMERICAN CITY for January, 1939, page 89.



CUT PIPE QUICKLY, CLEANLY in the trench!

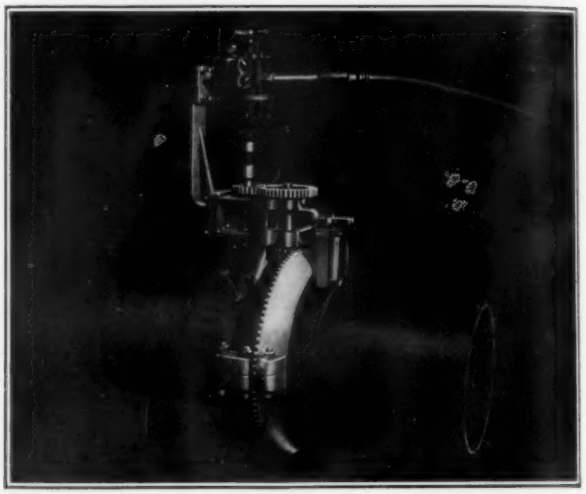
with

SMITH PORTABLE PIPE CUTTING MACHINES

A Symbol of Quality

THE A. P. SMITH MFG. CO. EAST ORANGE, N.J.

Since 1889



These machines are made in both hand and power-operated types and do their jobs cleanly and in less time.

By simply changing the cutting tools, they can be used on either steel or cast iron pipe from 4 in. to 48 in.—all sizes can be equipped for air motor operation.

Smith Portable Pipe Cutting Machines have a world-wide reputation for saving time, labor and costs and pay for themselves over and over again.

Send for special bulletins giving all details.

THE A. P. SMITH MFG. CO., EAST ORANGE, N. J.

7 So. Dearborn St. Chicago, Ill. | 901 Wm. Oliver Bldg. Atlanta, Ga. | 1013 S. Western Life Bldg. Dallas, Texas | 2799 Piedmont Ave. Berkeley, Calif. | 315 N. Crescent St. Flandreau, S. D.

Traffic Control and Facilitation

Conducted by Publications Committee, Institute of Traffic Engineers, 1 Park Ave., New York
Paul L. Green, Chairman; George W. Barton, Kenneth W. Mackall, Miller McClintock, Robert A. Mitchell, William R. McConochie, Arnold H. Vey, Joseph L. Wehmeyer, William A. Van Duzer, Thomas J. Seburn, Roger L. Morrison, Otto K. Jelinek, William C. Brandes

Planning Progressive Signal Systems

By WILLIAM C. BRANDES
Traffic Signal Engineer, City of Chicago, Ill.

THE development of signal control has been a subject of widespread interest, since these devices in some degree affect the daily life of millions of people. If numerous and closely adjacent intersections along a thoroughfare have been signalized by stages, it becomes apparent to the most casual driver that a saving of his time and patience might be accomplished by coordinating the various signals into a so-called "system." Public authorities are charged with the duty of providing the highest type of control obtainable.

The timing of signals for the ordinary isolated intersection is a relatively simple procedure, but designing an efficient progressive system of signals is in most cases a task for a competent traffic engineer.

Under what conditions is it advisable to interrelate signal timing? The answer is wholly dependent upon certain factors. Maximum spacing for system operation between adjacent signalized intersections varies with the type of street and the traffic using it, with local interferences, prevailing speeds, and still other factors. Spacing can be measured in time as well as in distance. Generally speaking, on a street carrying a considerable amount of through traffic with a minimum amount of local interference including non-signalized intervening intersections, signals spaced one-half mile apart might be time-related if prevailing speeds of passenger vehicles are approximately 25 to 30 miles per hour. When signals are encountered by moving masses of vehicles in periods of time up to about 80 seconds, they can be interrelated with advantage to the motorist. On the other hand, on narrow streets where traffic interferences are prevalent either mid-block or at non-controlled intersections, signals spaced ¼-mile apart might better operate independently. Each case must be studied individually to determine properly the practicability of coordination of signals. Obviously, signalized intersections which are near to one another should be related if a satisfactory timing is indicated.

When coordination has been decided on, the question of timing immediately presents itself. An engineer, with the aid of his "slip-stick," can quickly set up preliminary figures which will indicate to him the extent of his expectations with regard to time-saving by interrelation. He may find a simple job of timing or an extremely knotty problem of making "time" and "distance" break even in order to give him something desirable. Unequal distances between controlled intersections are bound to create problems of timing.

Get the Data First

The actual work of drawing up a time-space diagram for a group of signals should not be attempted until all the groundwork has been completed. Traffic volumes of ½-hour periods should be at hand for each and every intersection involved. The data must include right- and left-hand turns, and number of pedestrians. Roadway widths at intersection approaches, and other physical-plan features should be examined. Data as to the prevailing speeds of traffic using the thoroughfare, in all its variations, are invaluable. In fact, a thorough knowledge of all the characteristics of the street is necessary. Having this information and a generous supply of ruled coordinate paper, a diagram can be started.

It might be stated here that no definite rules or formulas can be given for drawing up a timing diagram that will fit any case. Every group of signals to be coordinated will present different problems of timing, because of the many variable factors. The following paragraphs are "helpful hints" to the amateur engaged in signal timing.

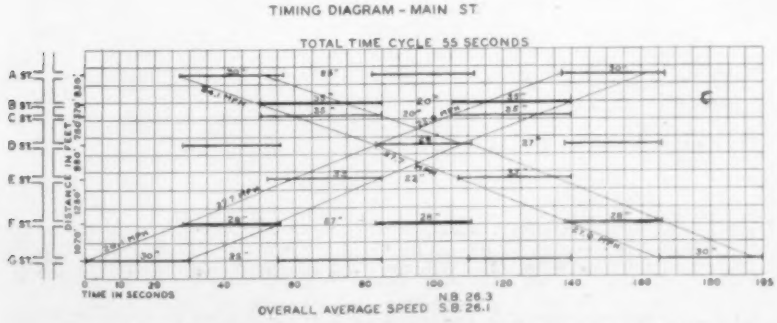
A time-space diagram usually has the distance scale in feet on the vertical, and the time scale in seconds on the horizontal. A valuable aid is a sketch of the street with all its intersections conforming to the distance scale in the left-hand margin, as shown in the accompanying diagram. "Go" intervals for the main street, as determined by traffic requirements at the individual intersections, are represented by horizontal lines on the second scale opposite the intersecting street, while spaces between lines are cross-street movement. This method, in the writer's opinion, has distinct advantages over the reverse method used by some engineers.

In timing any group of signals we have one constant and two variables. Distances between intersections are fixed—unless the intersections to be signalized can be selected for their spacing. The total time cycle and its divisions can vary. The speed for which the signals will be set can vary slightly.

The cycle to be selected should be the shortest cycle that will efficiently pass the traffic at the busiest intersection at the same time allowing proper speeds through the system. If one or more intersections should require three movements or phases, that feature generally will determine the minimum time cycle. It may be necessary to draw up time-space diagrams for several cycles and select the best.

The speed to be set up in the diagram should be that speed best suited to conditions in the street over each particular section, considering each direction of travel independently. Conditions may vary between sections, and it is not desirable to set up a uniform speed throughout for the mere sake of obtaining a straight-line speed curve on the diagram. On the other hand, material changes in speeds should be avoided over similar sections of street.

The time consumed for movement of a vehicle from one signalized intersection to the next (what we might term "running time") for the ideal two-way progression will be the total time cycle, or one-half the total cycle, or 1½ times the total cycle, etc. Thus, signals spaced ¼-mile apart would provide speeds of 30 miles per hour in each direction on a 60-second cycle, with a running time of 30 seconds



TYPICAL TIME-SPACE DIAGRAM CONTAINING MANY FEATURES DISCUSSED IN THE TEXT

This form of diagram is used by traffic engineers to determine the correct timing of signals at each intersection so that vehicles may pass the full distance without delay

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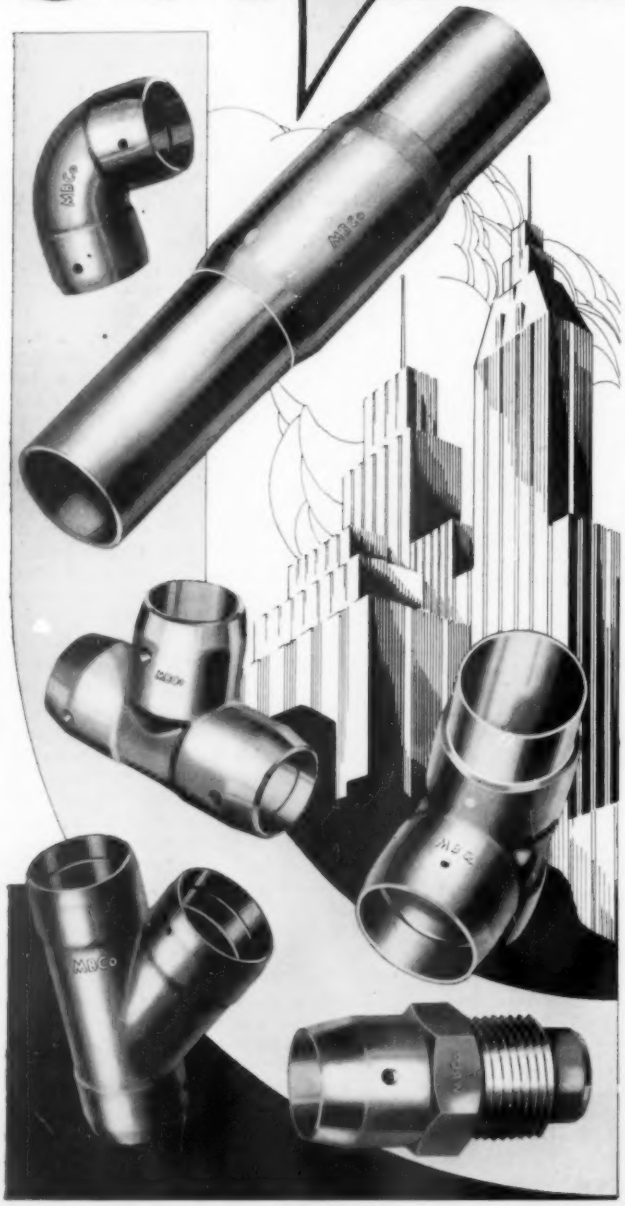

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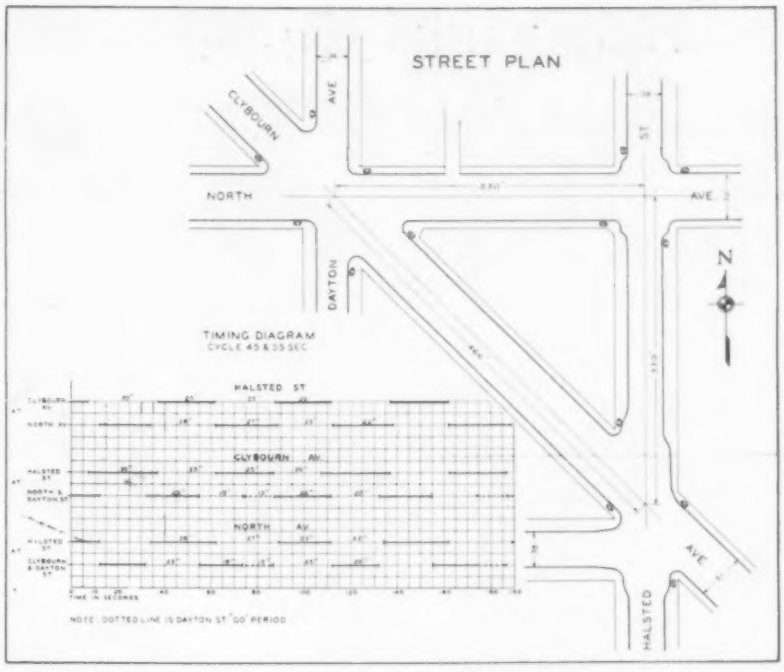
between signals. A 45-second cycle, allowing 45 seconds running time, gives a speed of 20 miles per hour. That same cycle will allow 26.7 miles per hour, or 67.5 seconds running time, if the signals are spaced ½-mile apart. Spacing of ⅛-mile allows 20 miles per hour on a 45-second cycle.

Unequal distances between signals call for variations in signal speed or a reduced "go" interval for through movement—what is termed as "width of through band." By allowing the speed line, which represents the first vehicle of a group or platoon, to cut through the "go" line after its beginning, a straight speed line may be retained. It is here that knowledge of the street will determine the extent to which the variables can be changed to bring about a satisfactory timing. It must be remembered that speeds must be *suitable* to conditions; cross-street green intervals sufficient to pass traffic, including pedestrians; and through band sufficient to handle traffic on the main artery. Fitting together these requirements in the best manner possible, considering all factors, is the most that can be expected from the very best signal engineer—though the result may fall short of an ideal timing. Oftimes, in the case of very short blocks, two or even three intersections may of necessity show green to the main artery at or nearly the same time. That condition will normally require a fairly long cycle to maintain an adequate through band. It also tends to spread the vehicles within a group unless some method, such as the flashing green feature, is used to designate that part of the "go" interval which is leading or lagging the through band.

Heavy turning movements into the artery should be considered. Large groups of vehicles turning into the main street out-of-step with the system, can be gotten under way at the next intersection before the main group is due to arrive, by a short lead of green. A change of cycle length, if that is obtainable from a central point, thereby affecting speeds between rush and normal hours or between seasons, may benefit the movement of traffic.

These features, while they seem relatively unimportant, may raise substantially the working efficiency of a progressive signal system. Suitable speeds may mean the difference between passing through the intersection in "high" or a hesitation and shifting of gears on the part of vehicle operators. After the engineer has laid out his best plan of timing, if he has any doubts as to its workability, he should test it out. This he can do by making stop-watch observations or actual runs through the proposed system.

By studying each timing problem, ingenious methods may be discovered to increase the traffic-carrying capacity of a thoroughfare at a troublesome intersection. A case in point is the timing now in effect at three intersections forming a triangle between Halsted Street, North Avenue and Clybourn Avenue in Chicago (see cut). Here one intersection, that of Clybourn and North and Dayton Streets, is timed 3-phase on alternate cycles, giving Dayton Street (a low-volume street) a movement every second cycle. All three intersections are coordinated, and on account of the short running time between intersections the common cycle must be held to a minimum. Consequently, to save delay, the cycle at all intersections is 55 seconds when Dayton Street is given an interval, but is reduced to 45 seconds when that street does not move. This "nest" of intersections has been operating satisfactorily for two years.



SIGNAL LAYOUT MAP WITH TIMING DIAGRAM

A convenient method of representing a coordinated traffic-signal layout with a time-space diagram showing signal coordination of a group of signalized intersections in close proximity. Note that two different cycle lengths are used to provide Go periods on alternate cycles for Dayton Street across North Avenue

Interrelation of signals may be accomplished by two methods:

(1) Individual synchronous-motor control units operating in definite time relation by virtue of a common source of electrical supply. With reliable electrical service, modern equipment of this type functions quite satisfactorily.

(2) Cable - interconnected controls which are maintained in time step by means of a centrally located master control unit from which numerous flexibilities of operation can be sent out over the system.

Certain additional flexibilities are claimed for the vehicle-actuated equipment operated in a system. With this equipment, speed control may or may not be retained. Under either condition the width of through band on main or, if present, on cross-street can be increased in the absence of the normal amount of opposing traffic. Vehicle "detectors" in the pavement compensate the timing in accordance with the instantaneous variations in traffic flow. Obviously, under proper application this type of equipment can increase efficiency of traffic movement commensurate with its increased cost.

When a new system is placed in initial operation, observations should be made for possible adjustments in timing. Changes should be followed with further observations. Speed signs for which the signals are set if posted on or near the signals will result in better observance of system operation. These are especially desirable where material changes of speed occur over various sections of the street.

With an efficient progressive signal system in successful operation, the traffic engineer can confidently expect public approval and requests for further coordination of signals.

Transit from a New Viewpoint

THE transportation of the masses in large cities is intricately involved with the general prosperity of the community. The welfare of businesses, of real estate, the economic value to the traveling public, their comfort and time saving, indicate to me that the old idea that a transportation line should be a self-supporting enterprise deriving its whole income from nickel fares and miscellaneous advertising revenues, is an unbalanced relationship of all the factors involved. In other words, the transportation problem becomes a community problem, and its adequacy is definitely reflected in community prosperity.

In the next issue I shall attempt to approach the problem from this viewpoint. The time is now ripe to show the most logical system, and how it should be planned and subsidized.

HARRY C. KOCH,
Associate Traffic Engineer, Detroit, Mich.

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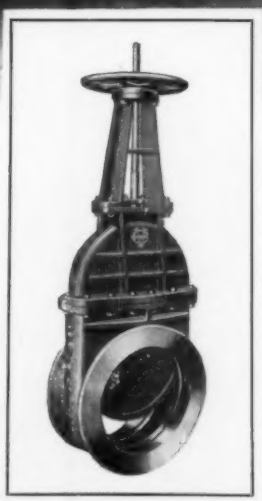

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Improving Municipal Administration

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Municipal Reporting Improved in 1938

IMPROVEMENT in the reports of cities to their citizens has been noted by the International City Managers' Association after an examination of annual reports of 1938. One hundred cities in all population groups submitted reports during the year, compared with 81 in 1937 and 74 in 1936.

Sample reports of the group showed that cities have turned from mere chronologies of events to explanation of the purposes and methods of operation of their various departments. They describe major steps taken to improve and modernize departmental operations. They attempt to measure results attained, using the best statistical indexes available, but not confining the evaluation to quantitative measures. They work statistics into the text, relating them in proper perspective to the situation as a whole.

Examples of improved reporting cited by the Association included the report of Fort Worth, Texas, which gave highlights of citizen activity in the city government, showing more than 2,700,000 individual participations in local recreational facilities. Berkeley, Calif., explained to taxpayers the high credit rating of its bonds and the low ratio of bonded indebtedness to assessed valuation. The Portland, Ore., report emphasized the broad objectives of the city plan and the means being used to carry out these objectives. Sacramento, Calif., featured its Police Department reorganization as the chief news of 1938.

Among small cities submitting 1938 reports were Webster City, Iowa, Alliance, Nebr., Princeton, N. J., and Murfreesboro, Tenn. Reporting cities in the population group from 10,000 to 30,000 included Grand Junction, Colo., Tallahassee, Fla., Winnetka, Ill., Eldorado, Kans., and Augusta, Maine. Larger cities making reports were Long Beach and Sacramento, Calif., Schenectady, N. Y., Portland, Maine, Cincinnati and Toledo, Ohio, and Milwaukee, Wis.

Legal Procedure for Municipal Boundary Changes

MANY cities planning to change their boundaries by annexation, detachment or consolidation during 1939, before the next decennial census, must meet a variety of legal provisions, a survey by the American Municipal Association shows.

The survey pointed out that annexation has slackened in the last decade, after a heavy period of activity. Since April, 1930, there have been 344 annexations and 105 detachments in all cities over 10,000. During a previous 15-year period,14 of the larger cities alone made 99 annexations.

All but 11 states provide some general method by which one or more classes of municipalities can add or detach territory, according to the survey. In the 11 states—Connecticut, Delaware, Florida, Georgia, Idaho, Louisiana, Maine, Maryland, Massachusetts, North Carolina and Rhode Island—cities must seek special acts of the legislature for the purpose.

In the other 37 states, cities are either granted the privilege of taking action through their councils, petitioning for the change in territory, or they can make the move by ordinance. Elections are held for final approval of the annexation or detachment in a majority of the cases. In a few states, courts act upon such proposals after holding hearings for interested property owners.

Although boundary changes frequently have a decided effect on financial obligations of the units of government involved, only about 20 states make definite provisions for dividing the debts of governmental units in the annexation or detachment process.

A substitute for annexation in some cases has been devised by several states which grant municipalities control over property outside their boundaries for such regulation as lot size and street arrangement. Michigan cities, for example, can exercise such control for three miles beyond their limits, while Minnesota municipalities have a two-mile control. Most cities, also, permit their municipalities to own lands outside city limits when they are utilized for recreation or public utility purposes.

State Assessment Proposed for Several Types of Property

TRANSFER of assessment of several types of property from local officials to state tax departments may be one means of improving assessments, a report issued by a special committee of the National Association of Assessing Officers declares. The report, by the Association's Committee on Assessment Administration and Personnel, points out that local assessors are frequently required to assess such non-local property as public utilities, forest lands, rolling stock of transportation companies and intangibles, although with their limited facilities they face "a well-nigh impossible task."

The committee recommends that local assessors continue to assess privately owned real estate and tangible personal property not appropriate for assessment by state agencies. The transfer of the other types of property to state agencies would give local assessors the opportunity to devote "time and energy now dissipated in the assessment of properties better adapted by nature to state assessment," the report declares.

Among the advantages of state assessment for such properties as utilities, mines and forests, and intangibles, the report points out, are that state governments have greater access to necessary records, and greater resources in personnel. State assessment of types of property recommended will also make it easier to adopt uniform standards and practices, which will result in greater uniformity of assessment on a state-wide basis.

Among the principles recommended by the committee for division of assessment between local and state agencies are: that the division of jurisdiction between state and local agencies should be clear to both taxpayers and assessors; and that the agency assessing a property tax should be the agency which depends most heavily upon the proceeds of the tax. Also, all property which lies in more than one local assessment district and which could more equitably be assessed as a unit should be assessed by a state agency.

Other classes of property which the committee found should be assessed by state agencies include migratory property constantly moving in and out of the state, property inventoried by state or Federal agencies such as intangibles, and property found in relatively small numbers and requiring highly trained persons for appraisal.

Cities and States Inaugurate Apprentice Training Programs

AT least five cities and the states of Wisconsin, Michigan and Indiana inaugurated apprenticeship training programs in public services within the past year, the Civil Service Assembly of the United States and Canada reports. Although the programs vary as to qualifications for apprenticeships and stipends paid, they all have the same purpose of training inexperienced persons who possess academic preparation for the public service.

San Diego, Calif., for example, created several positions in the civil service to be known as "municipal student workers," to bring college students into the offices of the City Manager and the Civil Service Commission. New York City appointed 11 "cadet engineers" to various kinds of local government apprentice positions.

Other cities which installed some type of apprenticeships during the year included Glendale, Calif., Saginaw, Mich., and Portland, Ore. Los Angeles County, Calif., has had such a program since 1933 in its Department of Budget and Research.

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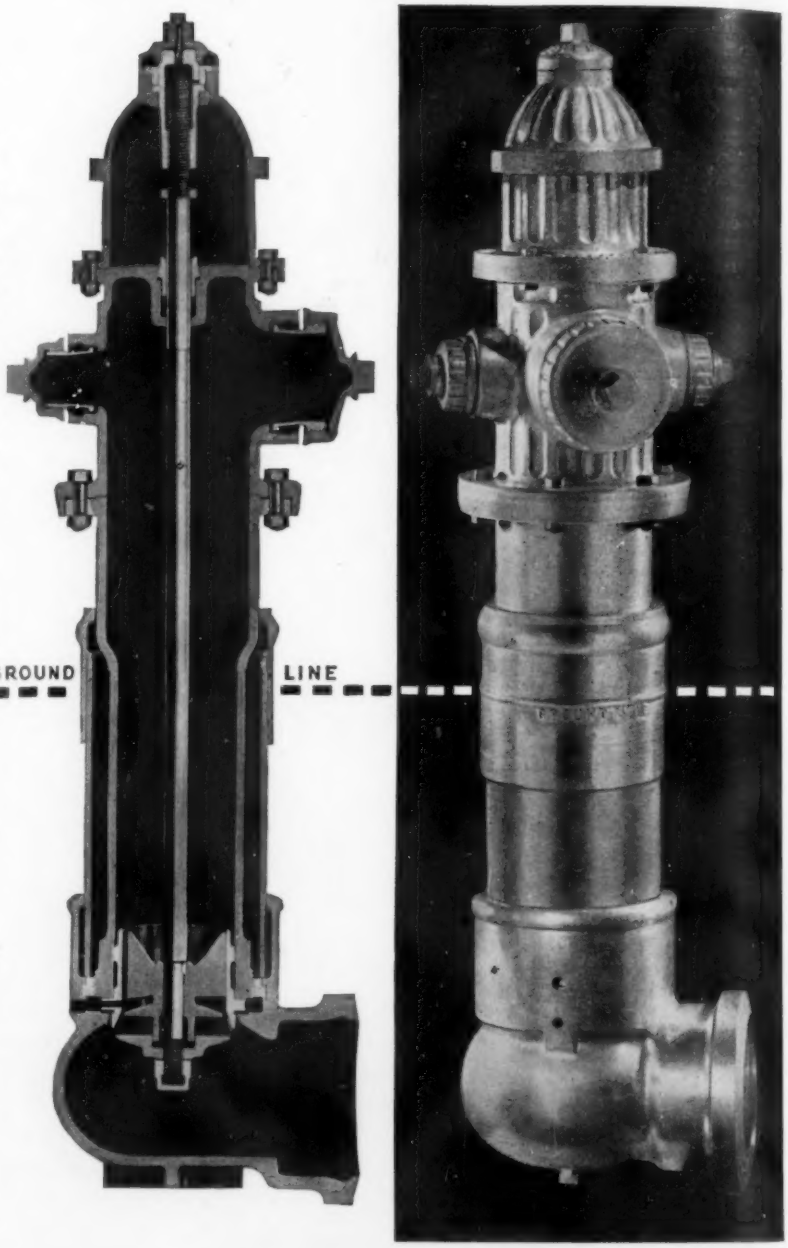

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Examination Fees Help Civil Service Program Budget

EXAMINATION fees designed to help finance an adequate civil service program for New York City are yielding about $250,000 annually, or approximately 60 per cent of the municipal Civil Service Commission budget, according to the Civil Service Assembly of the United States and Canada. Under the system instituted several years ago by the New York City Commission, applicants for civil service examinations pay from $1 to $3—or approximately one-tenth of one per cent of the entrance salary of the positions for which they are applying. Promotional examinations call for more substantial fees, in some instances as large as $15. Little opposition to the fee system has been voiced, New York officials report. It has not noticeably reduced the number of applicants, although it has reduced the number of "repeaters"—persons who take all examinations offered.

Success of the fee system in New York City has led state officials to consider its establishment in connection with state civil service examinations. The state thus would follow the footsteps of Ohio, where, under state law, applicants for state civil service positions must pay a $1 examination fee for positions paying $1,000 or more, and 50 cents if the salary is between $600 and $1,000. There is no fee if the salary is under $600.

Examination fees are charged by only a few other public personnel agencies. The Jefferson County, Ala., Personnel Board, which also serves the cities of Birmingham and Bessemer, charges a flat fee of $1.50 for all examinations. The Civil Service Commission of Seattle, Wash., charges a fee of $1 for original applications except in the case of laborers. In Toledo, Ohio, applicants must pay a $1 examination fee.

With few exceptions, public personnel agencies lack sufficient funds to conduct adequate examination programs, the Assembly points out. During periods of wide unemployment, the number of applicants for public positions is far out of proportion to the number of vacancies in the civil service and hence the cost of giving and grading examinations is correspondingly great.

Roadside Zoning Gains Renewed Attention

ROADSIDE zoning to control structures along highways will receive added impetus in 1939, according to reports made to the American Society of Planning Officials. Legislatures of at least five states, including New York, New Hampshire, North Carolina, Oregon and Indiana, are to consider proposals for this purpose.

While comprehensive county zoning has shown that it is the most successful means of controlling roadside use in several California counties, much of the new legislation under study proposes strip zoning or some other form of control, the Society said. In these cases the state planning commission or the state highway or public works department is usually made responsible for administration.

The California counties, according to the Society, regulate roadside business uses and structures, limiting the size and location of business areas and requiring building setbacks. Businesses are restricted to those necessary to the motorist, and zoning laws supervise their architecture to maintain a certain standard of design. In most of these cases the zoning provisions are part of a broad county planning program.

NAHO Analyzes 25 Housing Surveys of 1938

ALTHOUGH a real property survey covering the entire area of a city is considered indispensable to long-range housing programs, some municipalities are proceeding with the planning of single housing projects on the basis of less inclusive studies, the National Association of Housing Officials reports. In many localities substandard areas are well defined and apparent, with need for correction universally recognized, the report says. In these cases, specialized interim studies of occupancy-vacancy, family composition, overcrowding and other factors have been found useful in justifying single housing projects.

An analysis of 25 housing surveys of one type or another completed in 1938 by cities ranging in population from 7,000 (Putnam, Conn.) to 1,238,000 (Los Angeles, Calif.) revealed only a few comprehensive real property surveys. Special housing surveys ranged from a study of use and occupancy by the Elgin, Ill., Post Office to a report on the relationship of crime and housing by the Orange, N. J., Council of Social Agencies. Los Angeles completed an investigation of the effect of slums on juvenile delinquency, crime and health. St. Louis, Mo., made a public health survey. Approximately 30 housing surveys started or planned during 1938 ranged in subject from real property surveys in Augusta and Savannah, Ga., Vincennes, Ind., and Helena, Mont., to a survey on Negro housing shortage by the Tulsa, Okla., Chamber of Commerce.

Schedules used in conducting spot checks or special block surveys should be of standard form, the Association points out, so that they can be keyed to any similar but more comprehensive survey which may be conducted in the future. Except under unusual conditions, the report states, use of survey techniques other than those developed by the Federal agencies may prove expensive and unsatisfactory.

During the past four years real property surveys have been conducted in more than 200 communities with the aid of Federal work relief agencies. Standard procedures have been prepared for surveys of many matters closely related to the planning of a public housing program, such as employment-unemployment statistics, land use, traffic, parks and playgrounds, schools, transportation and other community facilities.

Recent City Manager Appointments

J. W. BARNEY has succeeded George McGee as City Manager of Hillsboro, Ore.

C. H. Collins has been appointed City Manager of Dunedin, Fla., to succeed W. Lovett Douglas.

Charles H. Barnett has replaced C. S. James at Bartow, Fla.

Richard Forester has succeeded R. M. Ingram, Jr., at Palatka, Fla.

Alexander Garrett has succeeded Clarence O. Kirby at Oak Park, Mich.

Francis B. McGarry on January 1 became City Manager of West Palm Beach, Fla., to succeed Fram M. Hannon, who has returned to private business.

William T. McIlwaine, Jr., Assistant City Manager of Lakeland, Fla., has been appointed City Manager of Fort Pierce, Fla., to succeed E. G. Gustafson on February 1.

J. O. Vaugh, former Chief of Police, has been appointed City Manager of Cornelia, Ga., to fill the vacancy created by V. W. Crawford's promotion to Buford, Ga.

R. J. Whitney has been reinstated as City Manager of Mamaroneck, N. Y.

CLARENCE E. RIDLEY,
Executive Director, International City Managers' Association.

The Municipal Bond Market

Recent sales of new issues from January numbers of *The Bond Buyer*:

Amount	Borrower and Purpose	Rate (%)	Term (Years)	Basis (%)
$135,000	Woodbury Co., Iowa, Funding	.75	1.5 Avg.	.66
160,000	Brockton, Mass., Surface Drainage and Sewer	1.5	1-10 Ser.	1.39
100,000	Sioux City, Iowa, Fire Protection	1.75	9 Avg.	1.72
291,000	Mercer Co., N. J., County Building	2	10.25 Avg.	1.93
406,000	Chicago, Ill., Park Dist., Funding	2.75	6.25-10 O.-A.	2.02
		2.25	10.66 Avg.	2.11
13,556,000	Metropolitan Water Dist., Calif., Colorado River Water Works Refunding	4	29.75 Avg.	3.54
140,000	Brownsville, Tenn., Electric System Revenue	3.75	13 Avg.	3.64
110,000	Ripley, Tenn., Water System	3.5	4.85-13.5 O.-A. Prem.	3.68
166,000	Gadsden, Ala., Public Improvement	4	5.5 Avg.	3.99
115,000	Akron, Ohio, Grade Crossing Elimination	4	16.56 Avg.	4

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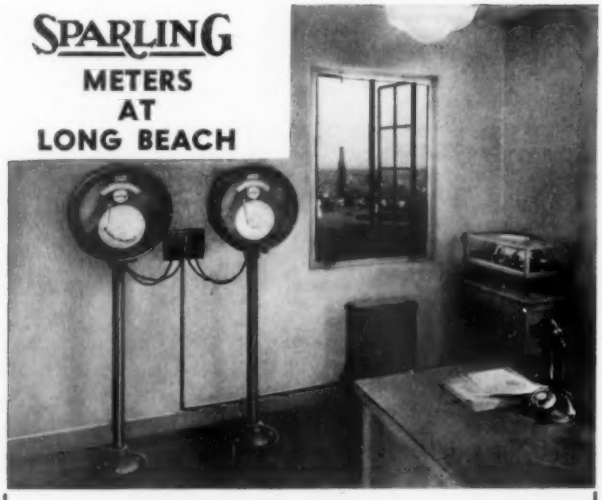

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FRANK B. WILLIAMS
Author of "The Law of
City Planning and Zoning"

Zoning and Planning Notes

With the cooperation of
EDWARD M. BASSETT
Author of "Zoning" and of
"The Master Plan"

Esthetic — Zoning Ordinance to Enforce Private Covenants — Boarding House — Constitutionality, Resort to Courts to Test, after Appeal to Board of Appeals for Variance

NEW YORK.—*Baddour v. City of Long Beach*, 279 N. Y. 167 (Court of Appeals, November 29, 1938).—Ordinances to compel obedience to private restrictive covenants in grants of real estate as to its use, may be adopted and enforced, even though they involve incidental esthetic considerations.

Where the covenant now expired prohibited use of the property for trade or business or for a boarding house, a zoning ordinance may be adopted restricting the use of buildings in the district to "a one-family detached house for one housekeeping unit only." Construed in the light of its history, such an ordinance excludes use of the property for the business of keeping roomers or boarders. The distinction should be noted between a "family house" where an occasional boarder might be accommodated and a house in which the "business" of keeping a boarding house was carried on. "Boarders do not constitute a family or a part of it. A family living together in a house as a home is none the less a family because incidentally there are boarders in the same house, and perchance eating at the same table. But a boarding house is none the less a boarding house, when used as such, because the boarding house keeper and his wife and children live in it while the business of keeping a boarding house is being carried on." . . . "The test is whether the petitioner's tenant occupied the house as a home for himself and his wife and children, and incidentally kept boarders also, or whether he occupied it as a place for carrying on the business of keeping boarders, although while prosecuting the business, and as a means of prosecuting the business, he and his wife and children live in the house also. Under this test, neither the size of the house nor the number of the boarders is of importance, except as evidence that may have weight in determining which is the principal use for which the building is occupied."

Using the dwelling as a rooming or boarding house, as above defined, is not a proper accessory use within a residential district.

A test of the constitutionality of a zoning ordinance by the courts is not barred by an appeal to a board of appeals for a variance.

Board of Appeals—Conditions

NEW YORK.—*Matter of Enid Holding Corporation*, Appellate Division, reported in *New York Law Journal*, January 2, 1939, page 15.—A permit was granted the corporation upon certain terms and conditions, the permit not to be exercised until they were complied with. The corporation exercised the permit without complying with the terms and conditions. This was a violation of the zoning ordinance. They now seek to intervene in this case. This the Court permits them to do, but only upon the condition that they obey the law and fulfill the previous terms and conditions.

EDITOR'S NOTE.—On the subject of conditions generally, see the interesting comments of Edward M. Bassett in his book, "Zoning," page 128.

Theaters—Traffic

NEW YORK.—*Matter of Small v. Moss*, 279 N. Y. 288 (Court of Appeals, December 6, 1938).—The Commissioner of Licenses of the city of New York has no power to refuse an application for a license for a theater at a given location on the ground that its erection and operation there would so increase traffic as to cause a condition dangerous to the public and detrimental to the general welfare. The Commissioner, being an administrative officer, has no power to declare any legislative policy, but only to apply any policies declared and rules and standards laid down in statute and ordinance, and no power to refuse license on account of traffic hazards created by a given location has been conferred upon him; although, doubtless, such power might constitutionally be granted.

EDITOR'S NOTE.—See to the same effect the New York case of *Goelet v. Moss*, in our Notes for January, 1937.

Highways—Access

PENNSYLVANIA.—*Breining v. County of Allegheny*, 2 Atl. 2d. 842 (Supreme Court, December 5, 1938).—Breining was the owner of land on a highway approach to a county bridge over the Allegheny River. He leased his property to a chain grocery with a provision allowing the grocers to construct roadways on his land to this highway. Breining obtained a permit to construct the driveways, including a curb cut. The county destroyed the driveways and restored the curbs. This is an action by Breining to enforce his right to maintain the driveways, with the curb cut.

When land is taken for the public use as a highway, the owner does not usually surrender his entire title to the land taken, but only an easement for passage and rights incidental thereto; and, subject to the easement, may exercise full rights of ownership of the land. The residue includes rights above and below the surface. Above, or on the surface, the owner of the fee may prevent members of the public from an unlawful use of the highway. Permission to the public to park must not infringe upon the right of the public, of passage, nor upon that of the owner, of access.

The abutter may erect steps, cellar doors, awnings, projecting windows, cornices, balconies, and the like, and may plant trees along the highway. He may use the surface of the street temporarily for purposes necessarily incident to the abutting land. Thus, he may place building materials or articles for household use temporarily on the street surface for a reasonable length of time. Under the surface of the highway he may build a mill-race, tunnel or basement, or he may mine coal.

Even where the state, by purchase or eminent domain, acquires a fee in the land upon which the highway rests, the abutting owner may prevent such unlawful uses of the street in front of his premises as amount to private nuisances, such as unreasonable parking. The right-of-way for highway use is in the state, in trust for public use for transit, including temporary stops.

Whether it be a "fee," or an "easement" highway, the owner retains the right of access to his land from the street. This right cannot be taken from him except by the payment of compensation* His access is subject to reasonable regulation.

An abutting owner undoubtedly has the right to place his car in a garage on his own lot, and, for the purpose of access to it, may use the sidewalk, cutting the curb under municipal permit, to enable him to make a safe entrance. But the right must be exercised subject to the protection of the public which may be using the highway or the sidewalk, and may be regulated under the police power in the interest of safety. When there is no substantial interference with public travel, the right cannot be denied him. In highly congested areas, the right of vehicular access may be reduced to a minimum, and be so limited as to exclude driveways immediately fronting the property if possible to locate them elsewhere; otherwise, vehicular access may in proper cases be restricted to hours of least congestion.

In this case the county absolutely prohibited driveways to an abutting owner's land, which fronted on a single thoroughfare and which could not be reached by any other means. This prohibition was unlawful, and cannot be sustained.

* Highways where this right is taken by the public are called "freeways." See this magazine for June, 1936, page 123.

EDITOR'S NOTE.—This case contains a full citation of authorities, of great value for reference.

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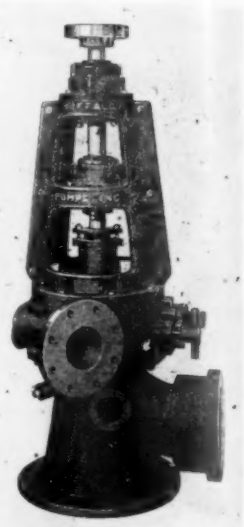

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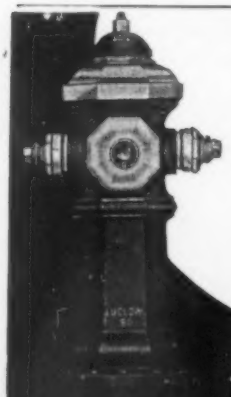

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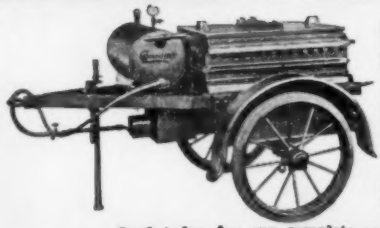

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Court Decisions Affecting Municipalities

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Accidents

Pedestrian giving statutory notice of injury due to sidewalk defect at specified location held not entitled to recover damages from city on proof that the defect was located at a different point (Alabama Supreme Court: *City of Birmingham v. Jeff*, 184 So. 281).

City and company maintaining traffic signal held jointly liable for injury to youth playing in street near broken traffic signal, due to splashing into his eye of caustic fluid from base of broken signal device (Illinois Appellate Court: *Koch v. City of Chicago*, 17 N. E. 2d, 411).

City held not liable for injury to boy whose sled coasted into tree stump in sidewalk area, coasting being prohibited by law (New York Supreme Court, Appellate Division: *Levy v. City of New York*, 7 N. Y. Supp. 2d, 529).

City, not abutter, held responsible for keeping streets and sidewalks in reasonably safe condition for travel (Minnesota Supreme Court: *O'Hara v. Morris Fruit & Produce Co.*, 282 N. W. 274).

City held not liable, in its governmental capacity or as operator of a street railroad, for injury to alighting passenger who slipped and fell upon convex marker at safety zone (Washington Supreme Court: *Wullbrandt v. City of Seattle*, 84 Pac. 2, 123).

Attorneys

Under statute, city held not empowered to employ attorney on percentage basis to collect delinquent taxes, and hence not liable for breach of contract for such employment (Texas Commission of Appeals: *City of South Houston v. Dabney*, 120 S. W. 2d, 436).

Board Meetings

Where a regular board meeting was adjourned from day to day, held that failure to meet the next day did not invalidate an adjourned meeting held the third day, all the members attending to act on the subject considered at the original meeting (Mississippi Supreme Court: *City of Vicksburg v. Melsheimer*, 184 So. 68).

Bond Issues

Bonds issued for civic recreational improvements and payable from gross revenues from the improvements held not to create an indebtedness within a city's constitutional debt limit (Arizona Supreme Court: *Crawford v. City of Prescott*, 83 Pac. 2d, 789).

City Clerks

Dismissal of clerk by commissioners against whom he was about to certify recall petitions held void as against public policy (Florida Supreme Court: *State v. Bloodworth*, 184 So. 1).

Civil Service

Meter reader employed irregularly in violation of civil service rules held entitled to reasonable value of services rendered (New York Supreme Court, Appellate Division, Fourth Department: *Horn v. City of Jamestown*, 7 N. Y. Supp. 2d, 62).

Claims Settlement

Municipal contractor's retention of check and causing it to be certified held to bar further claim to pay for work where check was tendered by city as being in full payment under contract (New Hampshire Supreme Court: *C. & R. Construction Co. v. City of Manchester*, 1 Atl. 2d, 922).

Council Proceedings

Under statute giving mayor vote on matters coming before village board and vote to break tie vote, held that he is entitled to a separate vote to break a tie caused by his vote as a member of the board (New York Supreme Court, Special Term, Queens County: *People v. Teller*, 7 N. Y. Supp. 168).

Elections

Bond election held not invalidated by use of voting machines instead of ballots without adoption of resolution permitting use of machines as provided for by city's charter (New York Supreme Court, Orange County: *Spano v. City of Middletown*, 7 N. Y. Supp. 2d, 14).

Endowments

Estate of one who willed funds in trust to establish and maintain city hospital held not so far depleted in assets as to defeat the trust and require distribution of funds to heirs (Alabama Supreme Court: *Noble v. First National Bank*, 183 So. 393).

Under will directing use of not more than $100,000 to construct, to the memory of a former mayor, a fountain, gate, arch or "other suitable monument of a permanent and ornamental nature," fund held properly used to establish hospital (Colorado Supreme Court: *In re Chucovich's Estate*, 83 Pac. 2d, 328).

Federal Loans

Pledge by city of income from light and water plants to secure Federal loan for sewer improvement held not incurrence of such indebtedness as required assent of voting taxpayers (Florida Supreme Court: *Hess v. City of Orlando*, 183 So. 473).

Home-Rule Charters

Statutes creating policemen's pension funds and fixing minimum pay for policemen and firemen held binding upon a city operating under a constitutional home-rule charter as being a matter of state-wide concern (Arizona Supreme Court: *Luhrs v. City of Phoenix*, 83 Pac. 2d, 283).

Municipal Classification

Taxpayers held entitled to enjoin municipal officers from proceeding as officers of a city of the second class, based upon a fraudulent census that falsely showed that there was sufficient population to bring the municipality into that class (Arkansas Supreme Court: *McClellan v. Stuckey*, 120 S. W. 2d, 155).

Official Tenure

One appointed "acting" clerk held not to acquire title to office of clerk that precluded his dismissal without cause and hearing (New Jersey Supreme Court: *Murphy v. Cuddy*, 1 Atl. 2d, 758).

Pensions

Fireman's widow's release of further claim to a pension on being paid pension accrued to date of settlement of her suit held binding on her, not being against public policy (New Jersey Supreme Court: *McKenna v. Montclair Police & Firemen's Pension Commission*, 1 Atl. 2d, 756).

Police Regulations

Ordinance forbidding peddling of bakery products within 1,000 feet of a bakery held void as falling without the police power of the city (New York Supreme Court, Special Term, Queens County: *New York Dugan Bros. v. City of New York*, 7 N. Y. Supp. 2d, 162).

Sunday-closing ordinance held invalidated by unjustly discriminatory exceptions made in favor of tobacco stores, confectioneries, shoe-shining parlors, moving-picture theaters, etc. (Illinois Supreme Court: *City of Mt. Vernon v. Julian*, 17 N. E. 2d, 52).

Ordinance requiring dogs to be vaccinated against rabies annually and imposing $1 license tax held valid although more restrictive than statute on same subject (Alabama Supreme Court: *City of Birmingham v. West*, 183 So. 421).

Police power held not to justify ordinance fixing opening and closing hours for barber shops (Oklahoma Supreme Court: *Oklahoma City v. Johnson*, 82 Pac. 2d, 1057).

Public Utilities

Statute authorizing issuance of revenue certificates to establish and maintain revenue-producing undertakings, including water systems, upheld as being constitutional (Georgia Supreme Court: *Miller v. Head*, 198 S. E. 680).

Ordinance requiring street cars to be manned by motorman and conductor upheld (United States Circuit Court of Appeals, Ninth Circuit: *City and County of San Francisco v. Market Street Ry. Co.*, 98 Fed. 2d, 628).

Salaries

Under statute, council held empowered to reduce salaries without city manager's recommendation (Wisconsin Supreme Court: *Webb v. City of Beloit*, 281 N. W. 662).

Slum Clearance

Georgia statutes providing for slum-clearance and low-rent housing projects in cities of 5,000 population or more upheld (Georgia Supreme Court: *Williamson v. Housing Authority of City of Augusta*, 199 S. E. 43).

Special Assessments

Where village ordinance on which special assessments were to be based contemplated city's acquisition of 100-foot strip as a parking lot, special assessment held not justified by acquisition of 90-foot strip (Illinois Supreme Court: *Village of Winnetka v. Murphy*, 17 N. E. 2d, 42).

Special tax bills for paving held not invalidated because Aldermen resolved that they "deemed" it necessary to improve street, although statute required that the necessity be "declared," nor because plans and specifications were not filed with City Clerk as recited in ordinance (Springfield, Mo., Court of Appeals: *City of Rolla v. Studley*, 120 S. W. 2d, 184).

Streets

City held not liable for damage to abutting property through lowering street grade, and hence neither it nor a council committee was liable for breach of an agreement signed by the committee to compensate the abutting owner for such damages (North Carolina Supreme Court: *Jenkins v. City of Henderson*, 199 S. E. 37).

Ordinance forbidding parades and public assemblies on streets, etc., without official permit upheld, and permit held properly refused for political speech that might incite public disturbance (New Jersey Supreme Court: *Thomas v. Casey*, 1 Atl. 2d, 866).

Mere change in street-surface level as incident to improving street held not such change of the street grade as to entitle abutters to damages (New York Supreme Court, Special Term, Queens County: *Application of Stuart, In re Village of Lynbrook*, 7 N. Y. Supp. 2d, 156).

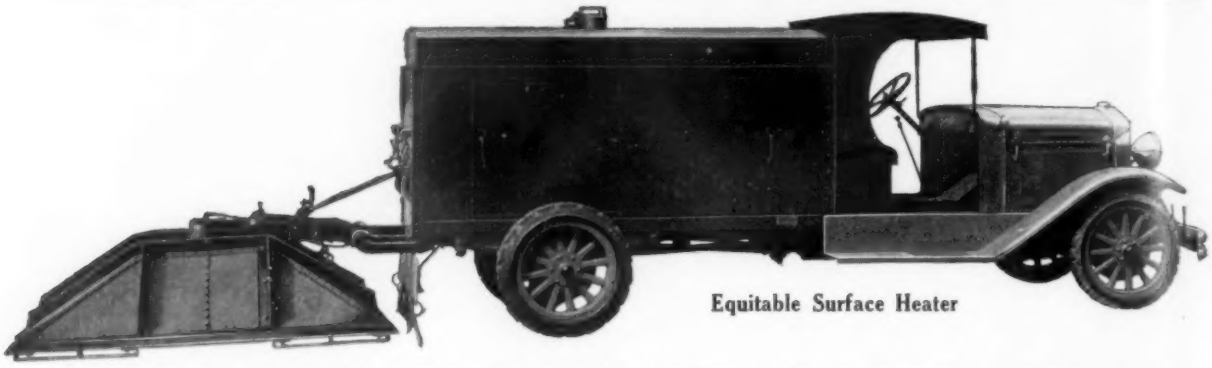
Abutter on street laterally intersecting street on which street-railway bridge was constructed across creek held without claim against city for damages claimed to result through obstruction of light and air and through noise of street cars (Minnesota Supreme Court: *McCarthy v. City of Minneapolis*, 281 N. W. 759).

Traffic Regulations

Ordinance providing for suspension of motorist's right to operate an automobile, on conviction of driving while intoxicated, held not to suspend state license, but to prevent driving within city limits (Ohio Court of Appeal, Trumbull County: *Kistler v. City of Warren*, 16 N. E. 2d, 948).

Taxation

Town held not to have lost the right to assess taxable property through having neglected to do so for many years (Kentucky Court of Appeals: *Brown v. Town of Dover*, 120 S. W. 2d, 225).



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Police Communication

Police Communication Systems.—By V. A. Leonard. University of California Press, Berkeley, Calif. 1938. 589 *pp., including bibliography* (13 *pp.) and index* (17 pp.). $5.00.

This is the fourth of a series of publications issued by the Bureau of Public Administration of the University of California, on the subject of the administration of justice. The book describes the problems encountered by police in the communication field, and the instruments, practices and techniques of communications employed by police in this country and abroad. Its particular value lies in the fact that it compiles in one volume hitherto scattered information, and thus makes it available for police and public officials everywhere. Following are the principal subjects covered: the police telephone and radio systems and teletype network; the beat and its equipment; the regional system; burglar- and holdup-alarm systems; disaster conditions; distant identification; foreign police communication systems. A 69-page Appendix contains various exhibits, suggested forms, specifications, and model legislation.

Financing Sewerage Works

In a concise little 22-page pamphlet called "Financing Sewerage Works," the Portland Cement Association has outlined the advantages and procedure of financing sewerage works by revenue bonds secured by service charges. The various steps in planning new sewerage facilities; in preparing and issuing the bonds; in establishing the rate schedule and billing the user; and in getting public support for the whole project, are described. Included also are a "Typical Revenue Bond Ordinance," a "Typical Sewer Rental Ordinance" and tables giving the experience of cities with sewer rentals. Three other methods of financing sewerage facilities are also touched upon: (1) general tax obligation bonds, (2) special assessments, (3) combination method. 22 pp. (Apply to Portland Cement Assn., 33 W. Grand Ave., Chicago, Ill.)

Civil Liberties

Not only because of the present-day significance of the question of civil liberties, but also because the municipal field is one in which this question is particularly involved, this pamphlet, "One City's Legal Experience in Civil Liberties," is of particular interest. Issued by the National Institute of Municipal Law Officials, it is a collection of legal opinions made in Chicago during the period 1935-1938, covering a sampling of cases in which civil liberties are concerned. They include cases on: sale and distribution of handbills, pamphlets, labor or other particular newspapers, on streets or otherwise; picketing of the Italian Consulate, picketing in labor disputes; housing of employees in steel plan during strike; segregation of races and racial discrimination in public employment; fingerprinting of relief applicants. Arranged in chronological order, these opinions indicate something of the evolution of these problems in actual municipal practice, and the development in legal reasoning on this subject. 20 pp. $1.00. (Apply to National Institute of Municipal Law Officers, 730 Jackson Pl., Washington, D. C.)

Housing

"Mopin System of Housing Construction" is the first of a series of pamphlets on the Design and Construction of Housing Projects Abroad. Limited in scope to developments which are new to this country, the purpose of the series is the advancement of American housing technique, particularly in the economic and efficient production of large-scale, low-rental housing, with which Europe has had more experience than America. In this pamphlet, the Mopin system of housing construction is described in detail with the help of illustrative diagrams; its advantages and limitations are analyzed. 15 mimeographed pp. (Apply to Arthur Bassin, 1780 Broadway, New York.)

Property-Life Insurance

Property-Life Insurance. By Hans Heymann, Ph. D. With a foreword by Prof. Richard T. Ely, a statement by Thomas Adams, a preface by Harold S. Buttenheim, and an introduction by Harold A. Lyon. 221 + *XXVII pp. Harper & Brothers, New York and London.* 1939 $3.00 *from* THE AMERICAN CITY.

A form of insurance new to the United States without which, in the opinion of Thomas Adams, "we shall never be able to deal effectively with the problem of replacement of decayed buildings or to prevent the expansion of blighted areas," is the theme of this book. The author, formerly of Berlin and now definitely committed to American citizenship, presents a plan for protection against depreciation on all kinds of material property, and shows how a combined property-life insurance and money-lending plan would apply to public and private housing, to mortgage banking, to shipbuilding and to problems of industrial depreciation.

The scope of this important new book is indicated more fully in the excerpts from one of the introductory chapters which will be found on page 44 of this issue of THE AMERICAN CITY.

Taxation

Reprinted from the *Yale Law Journal* for December, 1938, "Unwise Taxation as a Burden on Housing," by Harold S. Buttenheim, Editor of THE AMERICAN CITY, points out that the present system of taxing improvements on the land hinders the building of low-cost housing, because rents or sales prices from such housing are not high enough to cover the resulting (1) high tax on building, and (2) high cost of land, due to publicly created values and speculation. A gradual shift in the tax incidence from improvements to land, through the "graded tax plan," is advocated.

Included also is a discussion of the way the graded tax plan works out for each of the parties or elements involved; the objections that are made to it; the probable reasons for its slow growth in this country; and its functioning in other countries. 19 pp. 10c. (Apply to THE AMERICAN CITY, 470 Fourth Ave., New York.)

Tax Rates

Reprinted from the December issue of the *National Municipal Review*, "Comparative Tax Rates of 294 Cities, 1938" lists in table form for the 294 cities in order of size: assessed value; per cent of realty and personalty value assessed; actual tax rate per $1,000 assessed valuation; estimated ratio of assessed value to true value; adjusted tax rate on 100 per cent basis of assessment; and other pertinent data. Summary tables show, for all cities, comparisons, and increases and decreases in assessed valuations, and unadjusted and adjusted tax rates for different years. In the past year, both average assessed values and average tax rates have increased slightly. Since 1932 assessed values have decreased one-fifth, tax rates have increased one-sixth. The report concludes that unless radical measures are taken, the financial future, for the large cities particularly, looks none too bright. 16 pp. (Apply to Detroit Bureau of Governmental Research, Inc., 5135 Cass Ave., Detroit, Mich.)

Public Works

"Inventory—An Appraisal of Results of the WPA" is the first full report of the physical accomplishments—public facilities and services built or performed—by the 150,000 WPA projects completed by October 1, 1937. This impressive inventory of accomplishments summarizes activities of the following main types: roads and bridges; public buildings; parks and playgrounds; professional and clerical projects; water and sewerage; goods production; conservation; health; aviation. A table gives total figures for all of these. One section consists of excerpts from reports by State Appraisal Committees. 100 pp., effectively illustrated, 30c. (Apply to Supt. of Documents, Washington, D. C.)

Finance

Consolidated Loans Funds of Local Authorities.—By J. M. Drummond, Deputy Borough Treasurer, Smethwick, and A. H. Marshall, Deputy City Treasurer, Coventry. William Hodge and Co., Ltd., London. 170 *pp.* 7/6 *net.*

This book outlines and explains the various schemes which have been adopted by 50 authorities in England for the funding of Consolidated Loans. The longest chapter contains an analysis of the "model scheme" of the Institute of Municipal Treasurers and Accountants, which has been closely followed in most cases, with an explanation of any important departures from this. A short history of the Loans Fund is given, and its principles and advantages are outlined. Other chapters deal with the procedure in connection with the establishment of a scheme, consolidated Loans Fund accounts, and investment of other funds of the authority in the Consolidated Loans Fund. The appendix includes a "Suggested Model Clause for Establishment of a Consolidated Loans Fund."

City Surveys

The Bureau of Foreign and Domestic Commerce of the U. S. Department of Commerce has published a report, "Suggestions for Use in Making a City Survey," which is an elaboration of a report on the same subject issued in 1931 and now out of print. It is intended to be used in "evaluating the industrial and commercial status of a community or region and potentialities for improving its position in both the industrial and the consumer market." The reasons for making a city survey are discussed; suggestions for planning, making, and using the survey are given. Particularly valuable is an extensive basic guide outline, which lists factors to be analyzed in making the survey; data to be included about each of these factors; and a detailed list of sources of information. 56 pp. 10c. (Apply to Supt. of Documents, Washington, D. C.)

Public Administration Service

The Public Administration Service has issued a pamphlet describing typical services which it has rendered or is rendering in various parts of the country. They cover technical assistance for government agencies—cities, towns, villages, school districts, counties, states and the Federal Government—including administrative surveys, reorganizations, installations of improved systems and procedures; and general services for the improvement of public administration—technical assistance to communities, issuing of publications on a wide variety of subjects in the field of government administration, training in public administration, inquiry and research service, and the investigation of administration practices. 8 photo-offset pp. (Apply to the Public Administration Service, 1313 E. 60th St., Chicago, Ill.)

Public Works

Two reports of the Committee on Civic Development of the Fine Arts Federation of New York, bound in one booklet, outline the history and describe the past development of various public projects undertaken in this city between 1935 and 1938. Conclusions and recommendations are presented. Subjects covered include: City Planning; Re-Zoning; Specific Developments—bridges, tunnels, highways, transportation facilities, parks and playgrounds, the civic center and City Hall park, the East River islands, the planetarium, market, post offices, airports, etc.; Miscellaneous Developments—housing, health facilities, inspectional service, centralized purchasing, New York 1939 World's Fair, the Art Commission, care of monuments and sculpture, etc. The second report—more critical than historical, and particularly interesting and lively—has several pungent things to say about such matters as modern architecture; where New York is heading; tearing down the elevated structures only to put up double-decker streets. 19 pp.. (Apply to the Fine Arts Federation of New York, 115 E. 40th St., New York.)

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Any size, shape or design of highway sign or marker (embossed or flat) can be processed and made luminous by use of Prismo materials.

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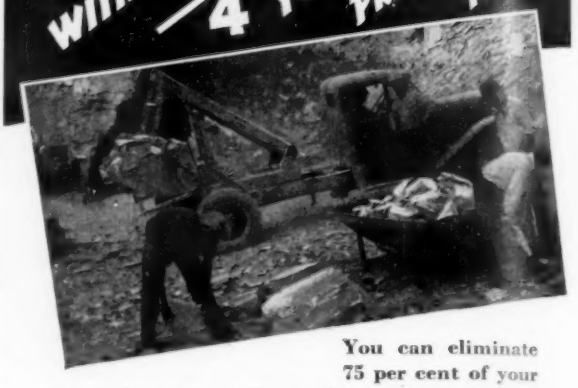

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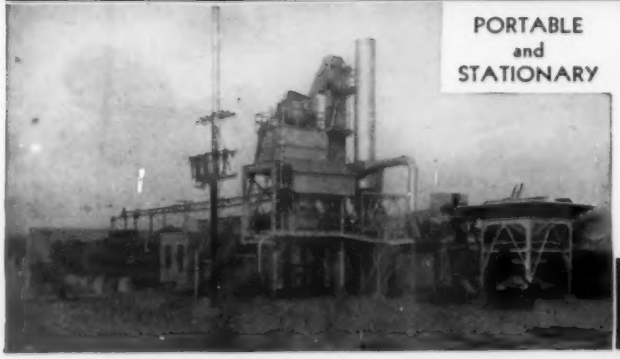

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Taxation

The State Sales Tax.—Compiled and edited by Egbert Ray Nichols, Marian Murray Nichols, and Egbert Ray Nichols, Jr. The H. W. Wilson Co., New York. 1938. $1.25 *from* THE AMERICAN CITY.

Intended for the use of student debaters, this handbook contains a collection of articles, speeches and radio addresses of the past four years, covering the theory and principles of the sales tax, its advantages and disadvantages, and its relative merits as compared with other taxes. One section of the book describes the experiences of specific states with the sales tax. A map and a chart indicate the history, rate, collection costs, distribution of proceeds and other facts about the tax in the 33 states in which the tax is in operation. Articles are taken from *Tax Policy*, *Tax Digest*, National Tax Association Proceedings, *National Municipal Review*, *The Survey*, etc., and are written by such authorities as A. G. Buehler, Mabel L. Walker, Carl Shoup, George C. Hester, Harold S. Buttenheim and other writers on taxation.

Planning

"Governmental Planning Machinery," by Sir Henry N. Bunbury, is a comparative study of the mechanisms and techniques of planning in nine different countries, representatives of which met in Belgium in the autumn of last year to discuss the subject. Planning is considered in a broad sense, as directed particularly to the "conservation, development, and better utilization of the national resources." The following types of planning organization are examined: Economic Advisory Councils; The Representative Council—France; The Appointed Council of Representative Character—England; The Appointed Council Not of Representative Character—United States; Other General Planning Organizations (committees, bureaus and institutes for research, exchange control offices). The sources, purposes and philosophies of different forms of planning organization are analyzed in their relation to the governments of the countries in which they exist. Although this report is brief and of necessity touches only the high spots, its implications are suggestive and significant. 25 pp. $1.00. (Apply to Public Administration Service, 1313 E. 60th St., Chicago, Ill.)

Housing

"Urban Housing—A Summary of Real Property Inventories Conducted as Work Projects, 1934-1936" covers inventories conducted, over a period of four years, in more than 200 urban communities, including approximately 45 per cent of the number of urban families in the United States in 1930. It is the most complete report of statistical information available on the physical characteristics of housing in the United States and includes type, age, condition, value, and mortgage status of residential structures; number of rooms, number of persons per room, sanitary facilities, and monthly rental of dwelling units. The information given indicates the existence of substandard housing in all sections of the country, with particularly bad conditions in certain areas. 326 pp. Microfilm reproductions, 1c per page plus 20c. (Apply to American Documentation Institute, Dept. of Agriculture Library, Washington, D. C.)

Attracting Industries

An interesting report, "Scottish Industrial Estate," describing the function and activities of that body, has been received. The Estate, a non-profit organization sponsored and financed by the British Government, seeks to alleviate unemployment in the Special Areas in Scotland, by offering to new industries and branches of existing industries which will establish themselves in these areas, special compensation. The booklet describes the assistance which the Estate offers: (1) to build factories for industries, on lease, according to a "Standard" plan or following a manufacturer's particular specifications; (2) financial assistance for plant, machinery, and working capital, and (3) contributions toward certain overhead expenses, such as rent, rates and income tax. The services and amenities of the district in which the Special Areas are located, and general advantages for establishing industry there, are also attractively described. 24 pp. (Apply to D. Sinclair Hay, Gen. Mgr., Scottish Industrial Estates, 29 St. Vincent Place, Glasgow, C. 1, Scotland.)

Mental Health and the City

Mental Disorders in Urban Areas—An Ecological Study of Schizophrenia and Other Psychoses.—By Robert E. L. Faris and H. Warren Dunham. The University of Chicago Press, Chicago, Ill. 1939. *xxxviii + 270 pp., including index and bibliography.* $2.50 *from* THE AMERICAN CITY.

This book is a study of the relationship between nine major types of mental disorders and different areas or neighborhoods of the city of Chicago, with one chapter giving similar data for Providence, R. I. Although the fact has been recognized before, the study gives statistical evidence supporting the conclusion that areas characterized by high rates of social disorganization are also those with high rates of mental disorganization. Cases of mental disorder,—like poverty, unemployment, crime, etc.,— show a regular decrease from the center to the periphery of the city. Also, certain types of psychoses are prevalent in certain types of urban neighborhoods: for example, schizophrenia cases occur in greatest concentration in rooming-house districts; manic-depressive psychoses in median-monthly rental districts, and so on. Although primarily a sociological and medical study, the book has significance for the houser or city planner, or anyone interested in community reorganization.

Traffic

Prepared by study committees of the Street and Highway Traffic Section of the National Safety Council, are four reports—"Speed Zoning," "Safeguarding the Pedestrian," "Prevention of Night Accidents," and "Tests for Intoxication."

In the first, factual data collected from all over the country are presented on the extent, type and effectiveness of speed zoning; and conclusions by the committee and recommendations for the application of speed zoning are given. Appendices include additional information on related speed problems: legislation, speed limits, speeds of vehicles in accidents and enforcement and educational programs. "Safeguarding the Pedestrian," a progress report, analyzes and recommends remedies for various phases of this problem: the elderly pedestrian; the intoxicated pedestrian; the effect of lighting on pedestrian safety; legislation and enforcement. Particularly interesting are the results of two studies made by the committee, which indicate that obedience to traffic signals correlates with low pedestrian accident rate. "Prevention of Night Accident Hazards," also a progress report, treats of the various factors affecting night accidents: condition of the driver, the highway, the vehicle. One section deals with the subject of street lighting. The last, "Tests for Intoxication," again a progress report, presents new information on the relation between intoxication and traffic accidents, discusses various tests for determining alcoholism, and gives a summary of the legal phases of the problem. 47 + 15 + 15 + 39 pp. (Apply to National Safety Council, Inc., 20 N. Wacker Drive, Chicago, Ill.)

Traffic

"Traffic Survey Manual" outlines information on how accident facts, traffic data, information on enforcement and educational activities may be collected, recorded, analyzed and utilized. Six "office projects," intended to furnish a complete factual picture of the community's accident experience, are outlined, and nine "field projects," designed to take a physical inventory of major thoroughfares. A fifteen-point program for traffic control is included, as well as suggestions for getting the survey under way, and for presenting conclusions and recommendations to city authorities. The material is concise and brief; accompanied with clear, easily-understandable diagrams; and presented in particularly attractive and effective form. 100 loose-leaf, photo-offset pp. Leatherette binding. $2.00. (Apply to National Conservation Bureau, 60 John St., New York.)

Public Works

The "Sixty-Second Annual Report of the Department of Public Works, and Annual Report of the Department of Streets and Electricity for the Year Ending December 1937" is composed largely of the report of the Bureau of Engineering, and contains also those of the following Bureaus: Water; Parks, Recreation and Aviation; Sewers; Rivers and Harbors; Maps and Plats; Building Maintenance and Repair; Compensation; Central Purchasing; Streets; Electricity; and the Accounting Division of the Commissioner's Office. 452 pp. (Apply to Dept. of Public Works, Chicago, Ill.)

Housing

Fundamentals of Housing Study.—By Joseph Earl Davies. Bureau of Publications, Teachers College, Columbia University, New York. 1938. *vii + 355 pp., including index.* $2.85.

This is a theoretical study of housing intended for the use of teachers of high school or adult groups. The book is elaborately annotated with the source and method of arriving at practically every statement given. Academic in approach, it does not claim to present any new material in the field. The contents cover: objectives and standards of housing; kind of shelter now available in the United States; extent to which American housing achieves its objectives; shortages among factors related to production; distribution and consumption of housing; suggested patterns of housing reform.

Cement Specifications

The ASTM Standards on Cement gives (1) specifications for portland, high-early-strength portland, natural, and masonry cement; and (2) methods of testing and chemically analyzing cement. Supplementary to the second section is included the Manual of Testing, which points out factors which may affect results of tests, and recommends particular procedures and methods of testing. Selected references on portland cement (11 pp.) are also listed. 107 pp. $1. (Apply to American Society for Testing Materials, 260 S. Broad St., Philadelphia, Pa.)

Roadside Development and Control

In December, the American Planning and Civic Association published in "*Planning Broadcasts*," a summary of the Joint Conference on Roadside Improvement, which was held for the purpose of discussing roadside improvement programs to be undertaken in the states. The principal national reports made were "Progress in Roadside Control," "Constitutional Amendments and the Trouble with Them," and "Roadside Conditions." 32 pp. (Apply to the American Planning and Civic Assn., 901 Union Trust Bldg., Washington, D. C.)

Another pamphlet issued by this Association is a report by Flavel Shurtleff, "Roadside Improvement," on the legal aspects of this subject, with particular reference to new highways to be built. Three main types of legislation to get rid of roadside offenses are considered, and proposed acts are given for each: the establishment of highway protective areas; the acquisition, development and protection of limited access highways; regulation of outdoor advertising. 24 pp. (Apply to the American Planning and Civic Assn., 901 Union Trust Bldg., Washington, D. C.)

A 7-page pamphlet, "What You Can Do to Hasten Billboard Control," published by the National Roadside Council, outlines action that can be taken by the individual, the community and the state, for billboard control. Points to be included in state laws regulating billboards are recommended.

"What It Is—What It Does," a small leaflet, outlines the activities of the Council. (Apply to the National Roadside Council, 119 E. 19th St., New York.)

"Suggested Uniform Act for Roadside Development and Control," issued by the American Automobile Association, provides for the establishment of a protected area along the highway, extending 1,000 feet from the center of the right-of-way on both sides of the road, and divided into commercial and non-commercial districts. 7 pp. (Apply to American Automobile Assn., Pennsylvania Ave., at 17 St., Washington, D. C.)

An effectively illustrated booklet, "The Bill Board—A Blot on Nature and a Parasite on Public Improvements," has been issued by a committee composed of New York State and local officials in cooperation with the New York Roadside Improvement and Safety Committee. It analyzes the billboard problem: the necessity for control; the history of the movement; what can be done to rid the state of offensive billboards. Existing laws regulating advertising signs in the vicinity of parks and playgrounds in New York are described, and a Proposed Law to Provide for the Regulation of Outdoor Advertising is presented. 43 pp. (Limited supply from Long Island State Park Commission, Belmont Lake State Park, Babylon, Long Island, N. Y.)

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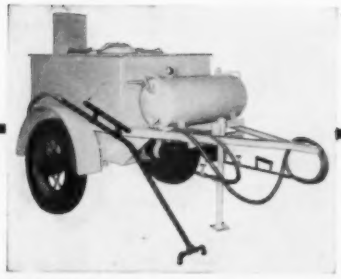

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NEW YORK

Fire Prevention

"A Model Records and Reporting System for Fire Departments" has been prepared by DeWayne E. Nolting, of the National Fire Protection Association, after a two-year study of fire department records in one hundred cities. Because "fire records and reports provide the basis or starting point for all intelligent fire protection activity," this pamphlet was written, as an aid to municipal fire departments in modernizing, standardizing, and increasing the efficiency of their records and reporting procedures.

The manual explains the installation and workings of a records system for the following kinds of records and reports: company records and reports, officers' reports of fire and alarms, inspection records, building fires classified by occupancy and cause, headquarters records, fire-alarm office records, consolidated reports, annual reports. Included are copies all suggested forms for reports which are considered necessary to provide minimum information. They can be obtained in quantity at low cost from the Public Administration Service, or cities can have their own supplies printed. 78 pp. $2. (Apply to the Service, 1313 E. 60th St., Chicago, or National Fire Protection Assn., 60 Batterymarch St., Boston.)

State Government

Florida and Its Money.—Published by the Florida Research Bureau, Jacksonville, Fla. 1938. 304 *pp.*

This book presents to the Florida layman, in easily-read and informal style, an explanation of the workings of the three branches of his state government, with a directory of present personnel; an explanation of the financial set-up of the state—revenue, expenditures, principles of taxation; and a general discussion of the most important problems now facing the Florida Legislature. The last includes a consideration of economic problems; problems with respect to natural resources, administration of government, industrial regulation, public schools and health, law enforcement, primaries and elections, census and apportionment, highways, transportation, county government, public amusements, state advertising. One section deals with problems connected with cities and towns.

The book is intended to assist the Florida citizen to "think intelligently" about state problems, by giving him a general knowledge of his government. Secondly, it is intended for use as a directory of "whom to see about what" in any particular state department.

Water Pollution

Issued by the Department of Scientific and Industrial Research in London, "Water Pollution Research—Summary of Current Literature" contains 125 abstracts of literature on Water Supplies, Analysis and Examination of Water, Sewage, Trade Waste Waters, Pollution of Natural Waters, and miscellaneous related subjects. 36 pp. 2s net. (Apply to His Majesty's Stationery Office, London, England.)

Other Reports Received

CHICAGO, ILL.—Building Code of the City of Chicago; Chapters 47-A—"Administration of ventilating and plumbing provisions," and 48—"Plumbing Provisions." Apply to Municipal Reference Library, 1005 City Hall. 41 pp. 10c.

DISTRICT OF COLUMBIA.—Report, Alley Dwelling Authority, fiscal year ending June 30, 1938. 17 pp.

MILWAUKEE, WIS.—Annual Consolidated Report, Common Council. Prepared by the Municipal Reference Library. 1937. 79 pp.

Conventions -- When and Where

Meeting is annual convention unless otherwise designated

FEBRUARY 13-25.—NEW BRUNSWICK, N. J.
Regional Institute in Traffic Engineering. (Rutgers Univ.) University Extension Division, Bureau of Public Safety and the College of Engineering in cooperation with The Institute of Traffic Engineers. Lawrence B. Tipton, Head, Bureau of Public Safety, Rutgers Univ., New Brunswick, N. J.

FEBRUARY 15-17.—NEW YORK CITY.
Association of Highway Officials of North Atlantic States. (Hotel Pennsylvania.) Sec.-Treas., A. Lee Grover, State Highway Dept., Trenton, N. J.

FEBRUARY 15-17.—ANN ARBOR, MICH.
Conference on Highway Engineering. (Michigan Union.) Sec., R. E. Morrison, Univ. of Michigan, Ann Arbor, Mich.

FEBRUARY 21-24.—WICHITA, KANS.
Southwest Road Show and School. Mgr., F. G. Wieland, 225 S. Water St., Wichita, Kans.

FEBRUARY 25-MARCH 2.—CLEVELAND, OHIO.
American Association of School Administrators. Sec., S. D. Shankland, 1201 16th St., N. W., Washington, D. C.

FEBRUARY 27, WEEK OF.—LOS ANGELES, CALIF.
The Asphalt Institute. (Biltmore Hotel.) M'ng Dir., J. E. Pennybacker, 801 Second Ave.,New York.

MARCH 1-3.—NEW YORK CITY.
American Concrete Institute. (Roosevelt Hotel.) Sec., Harvey Whipple, 407 New Center Bldg., Detroit, Mich.

MARCH 7-10.—SAN FRANCISCO, CALIF.
American Road Builders' Association. Engr.-Dir., Charles M. Upham, 952 Nat'l Press Bldg., Washington, D. C.

MARCH 9-10.—TRENTON, N. J.
New Jersey Sewage Works Association. (Stacy-Trent Hotel.) Sec., John R. Downes, Bound Brook, N. J.

MARCH 27-29.—NEW YORK CITY.
Greater New York Safety Council, Inc. (Pennsylvania Hotel.) Exec. Vice-Pres., W. Dent Smith, 60 E. 42d St., New York.

MARCH 30-31.—ROCHESTER, N. Y.
American Water Works Association—New York Section. (Hotel Sagamore.) Sec.-Treas., R. K. Blanchard, 50 W. 50th St., New York.

APRIL 10-12.—MEMPHIS, TENN.
American Water Works Association—Kentucky-Tennessee Section. (Peabody Hotel.) Sec.-Treas., Howard D. Schmidt, 420 6th Ave., N., Nashville, Tenn.

APRIL 10-12.—FAYETTEVILLE, ARK.
Arkansas Water and Sewage Works Conference. (Engineering Bldg.) Sec., Harrison Hale, Univ. of Arkansas, Fayetteville, Ark.

APRIL 12-14.—TORONTO, ONT.
American Water Works Association—Canadian Section. (Royal York Hotel.) Sec.-Treas., Dr. A. E. Berry, Dept. of Health, Toronto, Ont.

APRIL 14-15.—GREAT FALLS, MONT. (Tentative.)
American Water Works Association—Montana Section. Sec., Herbert B. Foote, State Dept. of Health, Helena, Mont.

APRIL 17-19.—SPARTANBURG, S. C.
American Water Works Association—Southeastern Section. (Cleveland Hotel.) Sec.-Treas., B. P. Rice, 422 State Office Bldg., Columbia, S. C.

APRIL 20-22.—URBANA, ILL.
American Water Works Association—Illinois Section. (Urbana-Lincoln Hotel.) Sec.-Treas., W. D. Gerber, P. O. Box 232, Urbana, Ill.

APRIL 25-26.—INDIANAPOLIS, IND.
American Water Works Association—Indiana Section. (Antlers Hotel.) Sec., J. A. Bruhn, Box 855, Indianapolis, Ind.

APRIL 27-28.—DAYTON, OHIO.
American Water Works Association—Ohio Section. (Van Cleve Hotel.) Sec., T. R. Lathrop, State Dept. of Health, Columbus, Ohio.

MAY 8-13.—CHICAGO, ILL.
National Fire Protection Association. M'ng Dir., Franklin H. Wentworth, 60 Batterymarch St., Boston, Mass.

MAY 11-13.—TACOMA, WASH.
American Water Works Association—Pacific Northwest Section. (Winthrop Hotel.) Sec., Fred Merryfield, Oregon State College, Corvallis, Ore.

MAY 15-17.—BOSTON, MASS.
National Conference on Planning. (Hotel Statler.) Joint annual conference of American Society of Planning Officials, American Planning and Civic Association, National Economic and Social Planning Association and American Institute of Planners. Conference Dir., Miss Elisabeth H. Herlihy, Room 24, State House, Boston, Mass.

JUNE 11-15.—ATLANTIC CITY, N. J.
American Water Works Association. (Hotels Ambassador and Chelsea.) Sec., Harry E. Jordan, 22 E. 40th St., New York.

JUNE 13-16.—MILWAUKEE, WIS.
Smoke Prevention Association. Sec., Frank A. Chambers, 1411 City Hall Square Bldg., Chicago, Illinois.

JUNE 20-22.—BUFFALO, N. Y.
American Public Welfare Association. Dir., Fred K. Hoehler, 1313 E. 60th St., Chicago, Ill.

JUNE 20-22.—PROVIDENCE, R. I.
New England Association of Fire Chiefs. Sec., John W. O'Hearn, Watertown, Mass.

JUNE 28-30.—STATE COLLEGE, PA.
Pennsylvania Water Works Operators' Association. Sec.-Treas., I. M. Glace, 22 S. 22d St., Harrisburg, Pa.

JULY 2-6.—SAN FRANCISCO, CALIF.
National Education Association of the United States. Exec. Sec., Willard E. Givens, 1201 16th St., N. W., Washington, D. C.

JULY 5-13.—STOCKHOLM, SWEDEN.
International Federation for Housing and Town Planning. Sec., Mrs. Paula Schafer, rue Cantersteen 47, Shell Bldg. 608, Brussels, Belgium.

JULY 17-22.—OGDEN, UTAH.
National County Officers' Association. Pres., G. F. Breitbach, Court House, Milwaukee, Wis.

SEPTEMBER 12-14.—KANKAKEE, ILL.
Illinois Municipal League. Sec., A. D. McLarty, 500 E. Capitol Ave., Springfield, Ill.

SEPTEMBER 13-15.—LANSING, MICH.
American Water Works Association—Michigan Section. (Olds Hotel.) Sec., M. N. Gerardy, Water Board Bldg., Detroit, Mich.

SEPTEMBER 18-21.—OAKLAND, CALIF.
League of California Municipalities. Sec., Richard Graves, 223 City Hall, San Francisco, Calif.

SEPTEMBER 18-19.—OLD POINT COMFORT, VA.
League of Virginia Municipalities. Exec. Sec., Morton L. Wallerstein, 902 Travelers Bldg., Richmond, Va.

OCTOBER 5-6.—READING, PA.
American Water Works Association—Four States Section. Sec.-Treas., Carl A. Hechmer, Washington Suburban Sanitary Dist., Hyattsville, Md.

OCTOBER 11-13.—KANSAS CITY, MO.
American Water Works Association—Missouri Valley Section. (Hotel President.) Sec., Earl L. Waterman, Univ. of Iowa, Iowa City, Iowa.

OCTOBER 16-19.—DALLAS, TEXAS.
American Water Works Association—Southwest Section. Sec.-Treas., Lewis A. Quigley, 3320 W. Berry St., Fort Worth, Texas.

OCTOBER 16-20.—CINCINNATI, OHIO.
National Association of Public School Business Officials. Sec., H. W. Cramblet, Board of Education, Pittsburgh, Pa.

OCTOBER 17-20.—PITTSBURGH, PA.
American Public Health Association. (William Penn Hotel.) Exec. Sec., Dr. Reginald M. Atwater, 50 W. 50th St., New York.

OCTOBER 25-28.—SAN FRANCISCO, CALIF.
American Water Works Association—California Section. (San Francisco Hotel.) Sec.-Treas., Carl M. Hoskinson, Division of Water, Sacramento, Calif.

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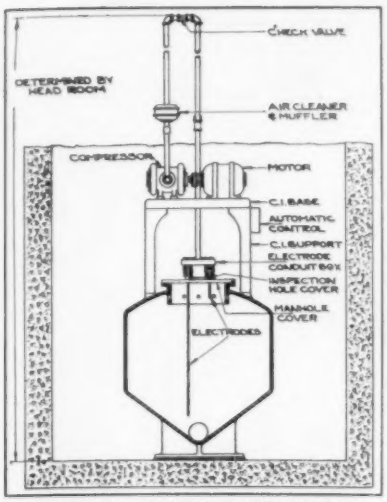
News and Illustrations

Items of Interest to City, Town and County Officials, and Others Concerned with the Economical Construction and Efficient Operation of Public Improvement Undertakings



THE NEW YEOMANS-SHONE SEWAGE LIFT STATION

Sewage Lift Stations in "Package" Form

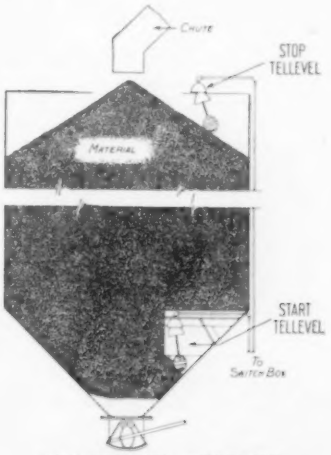
Yeomans Brothers Co., 1433 N. Dayton Street, Chicago, Ill., has announced the Yeomans-Shone "package" sewage lift station; in other words, a complete pumping plant for handling sewage and drainage in municipal sewer systems and in large buildings. This unit offers pneumatic ejectors at a cost comparable to that of a station using centrifugal pumps. It has no moving parts in or on the receiver, so it cannot jam or clog. A rotary compressor mounted on the receiver furnishes compressed air to displace the sewage in the receiver and force it up to the sewer.

All pipes and wiring connections between the compressor and ejector, and between the motor and the control, are made in the Yeomans factory. The stationary electrode control is waterproof, there are no floats, bells, or air storage tanks, and no stuffing-boxes, no screens, and no separate sewage-collecting well.

Bulletin 4100 issued by Yeomans Brothers Co. describes this unit completely.

Automatic Control for Bin Levels

A sensitive inexpensive device which has no wearing parts and which will automatically control the level of practically any material in bins or hoppers, has been announced by Stephens-Adamson Mfg. Co., Aurora, Ill. This Tellevel is a dual unit installed at the top and at the bottom of the bin and is designed to automatically start or stop conveyors or elevators which feed the bin. The operation is normally entirely automatic but, by a simple change in wiring, the Tellevel can be made to keep the flow of material stopped or continuous until the control switch is thrown. The unit consists of three mercury switches in series, with a sensitive cast aluminum housing having a Bakelite sphere extending downward. The housing is suspended from above by conduit pipe which permits the Tellevel to swing freely as the sphere is contacted by the material. The accompanying illustration shows an installation in a bin which might be used for the storage of water-works chemicals or of fuel in a municipal power house.



THE TELLEVEL INDICATOR INSTALLED IN A BIN

Stanley Reappointed on Firemen's Relief

L. E. Lowry, Sales Promotion Manager, The Gamewell Co., Newton Upper Falls, Mass., informs us that Governor Hurley of Massachusetts toward the close of his term in December reappointed V. C. Stanley, President of The Gamewell Co., as State Commissioner of Firemen's Relief for a period of two years.

GMC World's Fair Model Shown at Dallas

Delegates to the recent convention of the American Association of State Highway Officials in Dallas, Texas, had an opportunity to inspect a model of the General Motors Corporation's "Highways and Horizons" exhibit building to be erected at the New York World's Fair. The Corporation's exhibit will present a dramatic conception of what traffic-control methods and automobile transportation on the superhighways of the future may conceivably be like.

In discussing the exhibit recently, William S. Knudsen, President of General Motors, said, "The exhibit is planned with the hope that it will inspire greater public enthusiasm and support for the constructive work and planning of the highway engineers and public officials who have contributed in such an important way in recent years toward the improvement of our streets and highways."

DELEGATES TO THE RECENT CONVENTION OF THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS IN DALLAS, TEXAS, INSPECTING THE MODEL OF THE GMC EXHIBIT BUILDING FOR THE NEW YORK WORLD'S FAIR OF 1939

- - - and now

MARK-TIME *Manuals Replace Automatic Meters at Petersburg, Va.*

MARK-TIME is leading in revenue in another city where one side of the street has MARK-TIME Manuals and the other side—directly across—has automatics.

In fair competition
MARK-TIME MANUAL METERS
have previously replaced two
other manual meters.

MARK-TIME METERS are built simple—
simple like a bridge—and there
is next to nothing to get out of order.
That's why MARK-TIME wins against competition.

- - - and another thing

MARK-TIME METERS are built to withstand outside weather conditions.
You won't hear of a MARK-TIME METER freezing this winter anywhere.

M. H. RHODES, Inc. • 30 Bartholomew Avenue • HARTFORD, CONN.

MARK-TIME PARKING METER

Make Icy Sidewalks Safe

One of the great worries of city officials in the northern section of the United States during the winter is the large number of accident cases where pedestrians have fallen on icy sidewalks, resulting in lawsuits. While the responsibility is normally placed upon the householder or property owner for the clearing of sidewalks, there is a legal responsibility on the part of the city which leads most of those injured to include the city in a damage suit.

A new method of ice control by means of doing away with smooth ice on sidewalks has been developed by the Tamms Silica Co., 228 North LaSalle Street, Chicago, Ill. The material consists of a specially coated abrasive that imbeds itself in icy surfaces, preventing slipping. It melts the ice and keeps additional ice from forming. The manufacturers report that it is easy to apply and safe to use, and will not harm concrete walks, lawns, clothing or home furnishings. It is reported to leave no residue, and the chemical never dries up, so that it does not have to be replaced when there are repeated freezes and thawings by night and day.

New Pipe Locator Works Without Current

Because all electrical equipment is grounded, there is set up on 95 per cent of the water mains and services sufficient energy to make it possible to operate the new Universal pipe-locating device without any external electric circuit. The loop shown at the right of the illustration is merely plugged into the amplifier with the headphones and then the entire unit is carried anywhere to locate a pipe. In the event that the signal is not of sufficient strength to give clear indication, only then is it necessary to excite the line with the induction unit which is built into the carrying case and is complete with batteries and permanently connected wires. The short wire is connected with a pipe or rod driven into the ground over the pipe. The 15-foot wire is clamped to another rod which is driven into the ground the wire's length from the pipe.

THE NEW UNIVERSAL PIPE LOCATING OUTFIT

Because it is not necessary to have an electric current wire, which distorts the readings, this new pipe locator is reported to give the true center line of the pipe. It will also locate gas, electric and telephone lines, so that in the event a department wishes to lay a new water main, the exact location of the other lines can be checked in advance.

The high-gain amplifier is stepped up so that heavy batteries are eliminated, and it weighs only 12½ pounds. All the batteries are fitted with polarized plugs, which makes it impossible to connect the batteries wrong when making replacements. Complete information may be secured from Water Leak Detector Co., 166 North Third Street, Columbus, Ohio.

The Lynchburg Foundry Co., Lynchburg, Va., manufacturers of cast iron bell-and-spigot and flanged pipe and fittings, chemical castings and grey iron castings announce the retirement as of February 3, 1939, of Garland R. Johnson, Vice-President in Charge of Sales, and J. S. Wright, Treasurer.

Installation of Water-Supply Lines for New York World's Fair

More than 50,000,000 people are expected to visit the New York World's Fair this year and, to care for them, all the facilities of a great city, including roads, water, gas, electricity and sewerage and drainage, have been installed throughout the 1,216½ acres that comprise the Fair grounds. The specifications for the water-supply system were prepared by the Engineering Department of the World's Fair and submitted to the New York City Department of Water Supply and the Department of Parks and approved by them. The problem of selecting the water pipe was difficult for several reasons. Since the site of the Fair is a filled salt marsh, the soil is exceptionally corrosive. The ground is low, so that much of the pipe had to be installed in wet trenches. Speed of construction was vitally important and permanence also was essential, since the site will eventually be used as a public park.

Transite pressure pipe made by Johns-Manville, New York City, was chosen for nearly 10 miles of water lines, representing approximately 78 per cent of the total water pipe requirements. Transite's asbestos-cement composition and unusually low free-lime content offer high resistance to the corrosive conditions of the salt marsh and cinder fill. Also, the 13-foot lengths in which the pipe is manufactured are relatively light in weight, so that the 6- to 16-inch diameter pipe could be easily handled without mechanical equipment.

The flexible Simplex couplings used for jointing the pipe have additional advantages because they can be easily and quickly assembled by unskilled workmen, whether the trench is wet or dry. One of the major problems of the laying crews was mud surges. Whenever a load was placed on the soft, swampy ground, the underlying mud pushed out from beneath it and built up in waves on either side. This sub-surface movement shifted the pipe out of position and made it necessary to lay it over again. Owing to the flexibility of the couplings, the pipe line was undamaged. The problem of mud surges was solved by spreading a blanket of clay over the troublesome areas to give the soil greater stability.

A LINE OF TRANSITE WATER PIPE BEING INSTALLED DURING CONSTRUCTION AT THE NEW YORK WORLD'S FAIR

The tide was another disturbing factor in the marsh areas, its force being great enough to sway pilings back and forth. To further complicate matters, the fill was continually settling while the work of laying the pipe was in progress. The result of these circumstances was to place an added premium on the flexibility of the Simplex couplings which kept the joints flexible yet tight.

POLICE RADIO HELPS LOWER INSURANCE RATES IN DETROIT

Their last stick-up!

On Nov. 22, 1937 two men sauntered into a clothing store on 12th Street, Detroit—stuck-up the owner and his manager — rifled the cash register.

An employee in the rear of the shop pressed an A. D. T. alarm button. The alarm was relayed to police headquarters and broadcast.

Before the stick-up men could leave the store, five radio patrolmen arrived — made the arrest. Both thugs — and a third whom they implicated — are now serving long terms in State Prison.

W.E. equipped since '22

Detroit was one of the first cities to speed up its police work with Western Electric radio. That was in 1922. In 1930, equipment was modernized — and now the 1-way system is being changed over gradually to 2-way.

Detroit's 2 transmitting stations serve 182 radio cars patroling 145 square miles. Elapsed time on runs averages about 2 minutes.

Such fast police work has contributed to lower insurance rates in Detroit. Comparing 1938 figures with those of 1926, theft rates on private residences have been cut 34.5%; on apartments, 40.9%; on personal hold-up, 20%. And one insurance company has reduced automobile theft rates from 25% to 50%, depending on risks.

In large cities and small towns all over the country, Western Electric radio is helping police to provide better, faster protection. It can do the same for you. For details, write to Graybar Electric Company, Graybar Building, New York City.

Distributed by GraybaR

Western Electric Police Radio is giving added protection to 45,000,000 people.

Western Electric

Distributed by GRAYBAR *Electric Co. In Canada: Northern Electric Co., Ltd.*

POLICE RADIO TELEPHONE EQUIPMENT

THE NEWEST BURROUGHS ELECTRIC TYPING MACHINE

All-Purpose Electric Writing Machine

A new Selective Column Form Writing machine for filling out forms up to 26 inches wide is announced by Burroughs Adding Machine Co., Detroit, Mich., as suitable for all municipal work from ordinary correspondence to tax-billing. A "skip" tabulating feature permits the operator to tabulate directly to any desired column by merely depressing the key which selects that column.

When equipped with a *front-feed* chute, the machine is readily adaptable for registering checks and drafts, meter connect and disconnect orders, writing utility and tax bills and delinquent notices. Insertion of these smaller, original forms does not disturb the journal, register, or distribution sheet which remains in the machine. For instance, the assessment roll, ledger card, and tax bill can be typed in the same operation.

The new Burroughs machine may be equipped with a form holder which rides with the carriage, eliminating side-pull on continuous forms, and assuring better registration and neater results. Unit forms may be used equally well if preferred. Carriage movement from left to right is controlled by the electric carriage return key, which provides a full return or partial return (reverse tabulation) to an intermediate position. This permits unusually fast, short-line writing, since a mere touch of the return key immediately spaces the paper and locates the new writing position.

Diverse Tractor Tool Does Varied Work

Municipal departments will be interested in a new tractor attachment for moving earth or similar material, or for loading coal or snow. This Sargent Overhead Shovel consists of an interchangeable group of comparatively inexpensive accessories, a standard crawler tractor and a single operator. It is reported that the tractor with its accessory group costs less than the individual machine whose work it does.

In its primary shape the Overhead Shovel is a speedy dirt shovel, capable of hard digging and with a capacity of four shovelfuls per minute. The smallest shovel for earth excavation is $\frac{3}{8}$-yard, while larger sizes are provided for light materials and for larger tractors. It is not necessary to turn the tractor to load into trucks. A bulldozer blade with down pressure can be hooked onto the shovel in fifteen minutes. It can be changed to a snow loader in half an hour, while the machine can be used as a tractor without removing any of these accessories.

When used as a dirt shovel, it is equipped with a cast alloy steel bucket shell with digger teeth for hard digging. It gets its "crowd" by backing the tractor. When filled, the bucket is hoisted straight up over the tractor and dumped in front by tripping a hinged cover. A caster wheel under the front of the shovel frame protects the tractor springs from the load of the bucket when being dumped. Two hand levers and foot brake are all that are added to the standard tractor controls for the operation of the shovel. A reinforced steel roof protects the operator at all times.

In snow loading a special large-size bucket replaces the dirt bucket. The entire power of the tractor, applied in a straight line from near the rear of the tractor frame through to the cutting edge of the snow bucket, drives the bucket into frozen snow. The smallest size snow bucket is $1\frac{1}{2}$ yards with a demountable extension to increase it to 2 yards when the snow is light. Between storms the snow bucket may be used to load sanding trucks. The shovel has loaded $2\frac{1}{2}$-yard bodies with loose sand in $1\frac{1}{4}$ minutes.

Numerous other jobs handled by the buckets are pushing over trees and then lifting the roots out of the ground, stripping top-soil, cleaning ditches, etc.

The Overhead Shovel is made by Maine Steel, Inc., South Portland, Maine, known for many years as manufacturers of the Sargent snow-plow. Full details may be secured from the manufacturer. At the present time, this shovel is being made for use with Cletrac tractors only, but will eventually be made available for all standard makes of crawler tractors.

Pittsburgh Equitable Vice-President Dies

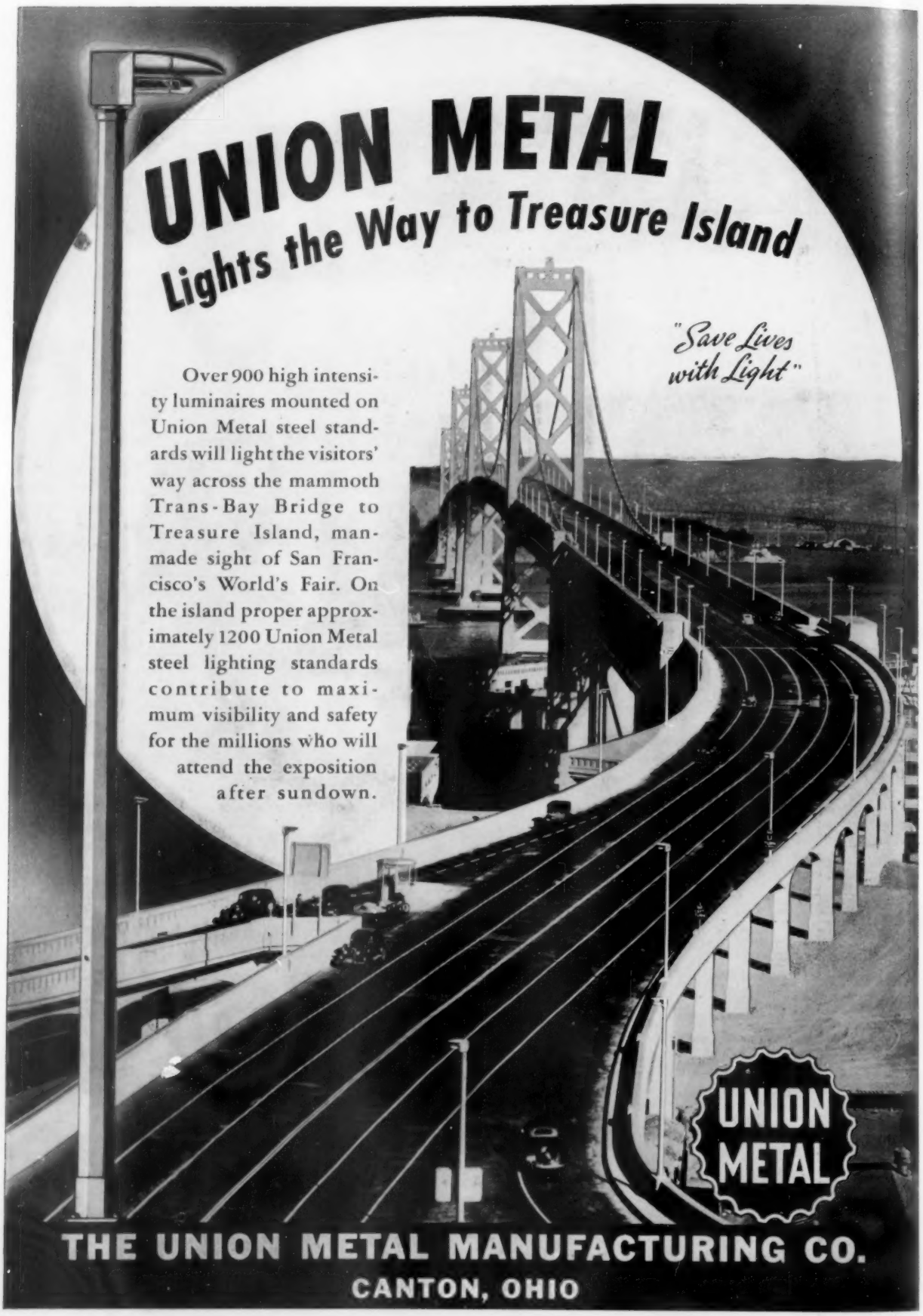
Edward A. Johnson, Vice-President, Pittsburgh Equitable Meter Co., Pittsburgh, Pa., died in December, following an active life in the water-works industry. A native of New York City, where he was associated with the Watson Stillman Co., and later as New York District Manager for Duff-Norton Mfg. Co., Mr. Johnson went to Pittsburgh in 1911 as General Sales Manager for Duff-Norton. In 1929 he joined the Pittsburgh Equitable Meter Co. He was Vice-President of the Water Works Manufacturers Association of the American Water Works Association, and active in the Rotary Club and Chamber of Commerce of Pittsburgh.

Portable Generators for City Departments

Portable generators are important tools for most city departments. Homelite portable generators are used by cities to furnish floodlighting for emergency crews, for fire departments, for battery charging, and for operating many electric tools such as drills, saws and hammers.

Homelite Corporation, 45 Riverdale Avenue, Port Chester, N. Y., has issued a new bulletin, No. 200B, which describes its complete line of portable gasoline-engine-driven generators in both direct and alternating current. The sizes range from 650 to 3,000 watts for direct-current generators, and from 500 watts to 2,500 watts on alternating-current plant. Copies of this bulletin may be secured by municipal officials free on request by mentioning this item.

LOADING SNOW WITH A 2-YARD SARGENT OVERHEAD SHOVEL


UNION METAL
Lights the Way to Treasure Island
"Save Lives with Light"
Over 900 high intensity luminaires mounted on Union Metal steel standards will light the visitors' way across the mammoth Trans-Bay Bridge to Treasure Island, man-made sight of San Francisco's World's Fair. On the island proper approximately 1200 Union Metal steel lighting standards contribute to maximum visibility and safety for the millions who will attend the exposition after sundown.
UNION METAL
THE UNION METAL MANUFACTURING CO.
CANTON, OHIO

THE NEW AMERICAN-LaFRANCE POWERON FIRE NOZZLE

New Fire-Hose Nozzle for All Types of Fires

A new type of nozzle that is designed for general use on fire-hose lines, because it permits the use of water in large quantities for extinguishing all classes of fires, including fires in oils and in live, high-voltage electrical equipment, has been announced by American-LaFrance-Foamite Corporation, Elmira, N. Y.

Tests conducted by the Underwriters' Laboratories show that the Poweron nozzle is suitable for use on equipment carrying current at voltages as high as 250,000. According to the Factory Mutual Laboratories, the Poweron nozzle is of value for fires with flash points as low as that of kerosene oil, and, under favorable conditions, will extinguish fires in more volatile liquids.

This nozzle is similar in size and appearance to the ordinary fire-hose nozzle and can be attached to any standard fire hose. Its special form of discharge, besides being more effective than a solid stream of water, forms a water curtain between the operator and the blaze. The nozzle is non-adjustable, which prevents the formation of either a solid stream or an ineffective spray. The manufacturer states that the Poweron nozzle is the first portable fire-fighting device to be approved for all classes of fires. Copies of the Poweron report covering tests of this nozzle can be obtained without charge from the American - LaFrance - Foamite Corporation.

County-City Building Paints Ceilings Anew

The County-City Building in Seattle, Wash., is undergoing a repainting of all ceilings with Luminall paint, made by the National Chemical & Mfg. Co., Chicago, Ill. This white paint is reported to have a 90.6 per cent light reflective factor. By the first of January approximately half of the ceilings in the Seattle building had been treated in this manner.

Ohio Brick Association

The National Paving Brick Association, Washington, D. C., informs us that its earlier announcement that Victor K. Gamble was appointed Secretary and Chief Engineer of the Ohio Paving Brick Association, which is the Ohio Region of the National Paving Brick Association, is in error. Mr. Gamble became Secretary of the Ohio Brick Association on December 15, but was not appointed the Chief Engineer of the Ohio Paving Brick Association.

New Chicago Salesman of National Meter Co.

The National Meter Co., 4207 First Avenue, Brooklyn, N. Y., has announced the addition of Dan R. Gannon, Jr., to the staff of its Chicago branch sales organization. Mr. Gannon has been associated with the water-works industry for the past fifteen years, and since 1929 has represented the Mueller Co. of Decatur, Ill. He majored in hydraulic engineering in the Universities of Montana and California.

Tire and Tool Pack

In these columns in March, 1938, page 121, we described the Hercules Tire-Pack, made by the Hercules Steel Products Co., Galion, Ohio. This novel way of taking care of the spare-tire problem on dump-truck bodies led the manufacturer to conduct a prize contest at the National Motor Truck Show in which the contestants were asked to submit to the company a list of the various articles which, in addition to a tire, they thought could well be carried in this compartment, which has a capacity of about 10 cubic feet.

Among the articles listed in the contest, which was won by Leon H. Zele, of the Zele Chevrolet Co., Torrington, Conn., were: screw-driver, Stillson wrench, extra tube, tire iron, tire spreader, lug wrench, tow chain, skid chains, pump, tackle, cement bags, 6-foot planks, waste or cloth, first aid kit, assorted cotter keys, chisel, tire valve kit, logging chain, hammer, shovel, overalls, soap, towel, shoes, hat, rain coat, gloves, leather jacket, emergency clothing, ropes, drills, pinch bar, grease gun, grease can, friction tape, punch, gasoline, spark plugs, broom, pick, jack, flares, red lanterns, distress flags, flashlight, lunch box, hoe, crowbar, pulleys, air hose, oil can, quart of oil, headlight kit, assorted bolts and washers, block and fall, and generator brushes.

THE COUNTY-CITY BUILDING, SEATTLE, WASH.

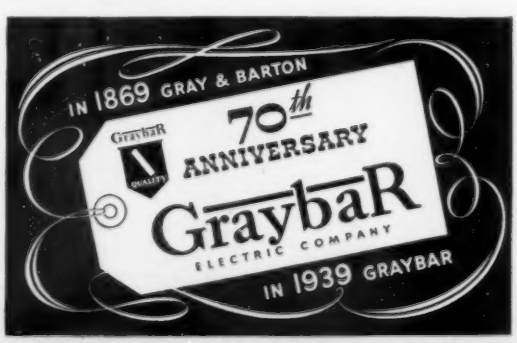
PUBLIC SAFETY - IN 1869

In 1869 the stalwart defenders of the law had fewer problems to cope with. There were no speeding automobiles . . . no troublesome parking problems . . . no tangled traffic jams to complicate the task of protecting the public safety.

Today, however, police and fire departments face a bigger, tougher job. Swift-moving modern life has added many new problems. The Public Safety departments of 1939 need help . . . the help of modern *electrical* public safety equipment.

Graybar can help simplify the task of selecting the right electrical equipment to efficiently aid in promoting public safety. Police Radio (made by Western Electric), Street Lighting Units (made by General Electric), Fire Alarm Equipment (made by Horni), Parking Meters (made by Karpark)—these and other electrical life, time, and money savers are all readily available from Graybar warehouses.

Each and every one of these items has been carefully selected for municipal use by an organization with 70 years of electrical experience. Since its early days, Graybar has satisfactorily served municipal electrical needs.



OFFICES IN 83 PRINCIPAL CITIES. EXECUTIVE OFFICES: GRAYBAR BUILDING, NEW YORK

PUBLIC SAFETY EQUIPMENT DISTRIBUTED BY GRAYBAR:

JOSEPH F. HEIL

New Officials of The Heil Company

At a meeting of the Board of Directors of The Heil Co., 3000 West Montana Street, Milwaukee, Wis., Joseph F. Heil, who has been serving as Vice-President since 1931, was elected Executive Vice-President, and George W. Kuhlman, Manager of the Heil Eastern factory at Hillside, N. J., was elected a Vice-President.

Features of Program of Asphalt Conference

The Twelfth National Asphalt Conference, to be held under the auspices of The Asphalt Institute of New York City, at the Biltmore Hotel, Los Angeles, Calif., during the week of February 27, is to feature twenty years of progress in highway construction with papers covering present materials, methods and equipment. Thomas H. MacDonald, Chief, U. S. Bureau of Public Roads, will open the Conference with the twenty-year story of the great Federal program which began in 1919.

Other papers will discuss the remarkable development of road equipment from hand tools to great machines which pick up materials, and mix and lay modern pavements, and two sessions will be devoted to methods covering the waterproofing and stabilizing of the earth subgrade under all types of pavement. through the widespread use of local materials which lower the cost of highways. Two other sessions will be devoted to the progress from the old-fashioned oiled roads to the modern cut-back materials which can be used and laid without heating, resulting in durable low-cost nonskid roads. Mineral aggregates, including stone, gravel and sand, will be discussed.

A special train to be known as "The Asphalt Special" will cross the continent from New York. Californians are planning to draw heavily upon the artists of Los Angeles and Hollywood for entertaining the convention.

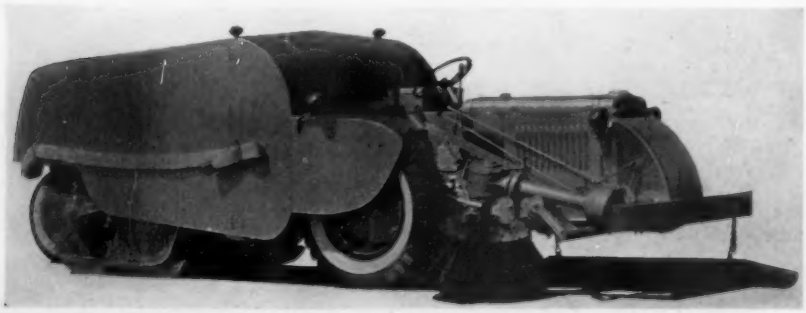
Motor Pick-up Sweeper Cleans 6-Foot Path

The new motor pick-up sweeper recently announced by Frank G. Hough Co., 919 North Michigan Avenue, Chicago, is small and compact and cleans a full 6-foot path with a 36-inch gutter brush and a 52-inch pick-up broom, which overlap 16 inches. Dirt is delivered by an elevator to a 1¼-yard bottom-dump dirt box that is loaded from the top.

Mounted on three wheels, and using the rear wheel for steering, the sweeper is easily handled around parked cars and in turning corners. The operator has full view of all work and controls operations from his seat. The machine carries a 160-gallon tank from which the water is pumped to spray ahead of sweeping. The power plant, cantilevered ahead of the gutter broom, is an International I-14 tractor with heavy-duty rear axle, three speeds forward and reverse.

The pick-up broom is closely filled with approximately 125 pounds of 26-inch fiber and a core of 3-inch Norway pine securely bolted to cast hubs. The gutter brush is filled with approximately 45 pounds of standard wide gutter brush wire and is driven from the front of the engine crankshaft through one rigid and two flexible gear boxes. It is adjustable to compensate for wear. For traveling, without sweeping, this brush, as well as the pick-up broom, is raised clear of the ground hydraulically and thrown out of gear from the driver's seat.

The pick-up broom, operating slowly, flicks the dirt a few inches to the bottom of the elevator, where the wipers carry the dirt up to the top of the dirt box. There are five wipers, consisting of heavy angle-irons of standard size to which are bolted strips of 2 x ½-inch rubber squeegees.



THE NEW HOUGH PICK-UP SWEEPER THAT TURNS IN A 12-FOOT RADIUS

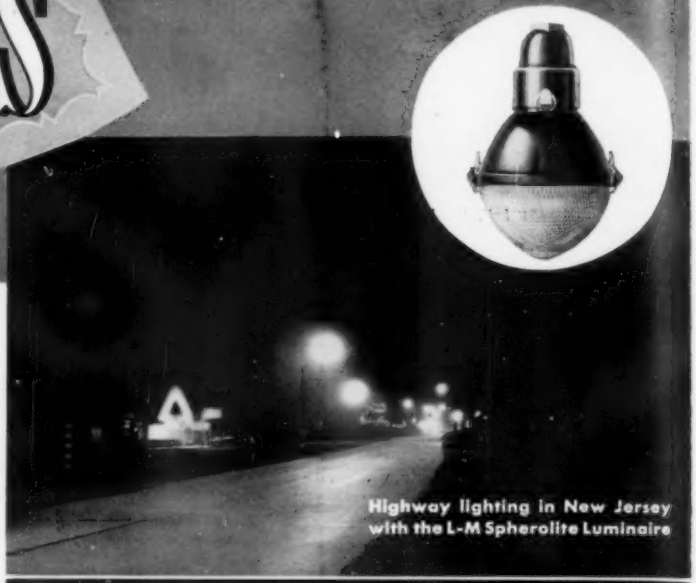
Buy Peerless

It is no mere advertising claim that a Peerless Pump will return its cost in lower power and repair bills. Hundreds of Peerless users confirm this statement with cold facts and figures. On a ten-pump order for the Metropolitan Water District of Los Angeles, Peerless guaranteed a connected load of 130 horsepower less than any other maker, producing cash savings of several thousand dollars yearly in power cost alone. Thus the few dollars extra you pay for Peerless quality, Peerless engineering and Peerless durability are returned to you manyfold during the life of the pump. Write for new Bulletin P-141 explaining a number of outstanding Peerless features.

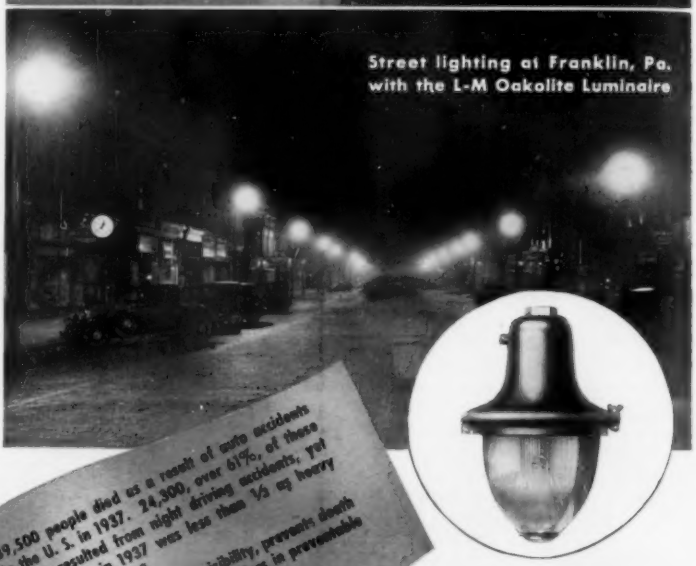
Factories:
LOS ANGELES, CALIF., SAN JOSE, CALIF.
FRESNO, CALIF. • MASSILLON, OHIO

★ WATER OR OIL LUBRICATION
Peerless
TURBINE PUMPS
FOOD MACHINERY CORPORATION
PERFORMANCE WITH ECONOMY

LIGHTING LIKE THIS SAVES DOLLARS AS WELL AS LIVES



Highway lighting in New Jersey with the L-M Spherolite Luminaire



Street lighting at Franklin, Pa. with the L-M Oakolite Luminaire

Guarding you from sudden death is only a part of the service good street and highway lighting gives. Good lighting protects your pocketbook, too. Surveys prove that losses due to traffic accidents, figured in dollars and cents alone, amount to far more than the cost of installing and maintaining efficient lighting equipment. That is why economy minded states and municipalities are speeding up lighting programs.

Line Material Company offers you Street and Highway Lighting Equipment that protects lives and pocketbooks to the fullest extent. Both driver and pedestrian see clearly under L-M Lighting; danger of fatal and costly traffic accidents is reduced to minimum. In length of service and low maintenance cost L-M lighting equipment further assures a maximum return on every lighting dollar you invest.

facts

39,500 people died as a result of auto accidents in the U. S. in 1937. 24,300, over 61%, of these deaths resulted from night driving accidents, yet night traffic in 1937 was less than ⅓ as heavy as daylight traffic.*

Good lighting giving clear visibility, prevents death and injury, saves millions of dollars in preventable accident losses.

*Figures of National Safety Council

LINE MATERIAL CO.

Outdoor Lighting

A Section of THE AMERICAN CITY
Devoted to the Lighting of Streets, Highways, Bridges, Airports, Athletic Fields and Parks and the Floodlighting of Public Buildings

Ashland Becomes Visible at Night

FIVE thousand persons recently celebrated the turning on of Ashland's new business street-lighting system, which Police Chief H. D. Foster believes will decrease the number of accidents. He says: "The luminaire installed is of the same type as the one used in Detroit, where fatal night accidents were cut from a night-to-day ratio of 7 to 1 down to 1¼ to 1." The new Ashland installation also includes sodium-vapor lighting at eight dangerous intersections. The golden light warns the approaching motorist of the intersection.

Mayor W. Art Mason officially opened the system, and Dr. H. E. Andrews made the dedicatory address, which was followed by the presentation of the new system to the city by Vice-President J. R. Halladay of the Ohio Public Service Co., who said: "In spite of better cars, safety campaigns, and better traffic engineering, the trend of night accidents has been up. With this new system, designed for us by engineers of the Westinghouse Electric & Mfg. Co., Ashland will have street lighting as good as any city of comparable size in Ohio. Of special interest is the installation of the sodium units, and already we have received many favorable comments concerning how it helps the motorist as he approaches these crossings at night."

Said Harry Chase, Westinghouse Street Lighting Engineer, Cleveland. "These new pendent luminaires have cut night accidents and fatalities in other cities and will do so in Ashland. They give plenty of glareless light, and one of them gives 40 times as much light as one automobile headlight."

YOU ARE ENTERING SAFELY AND SEEING ASHLAND, OHIO

ASHLAND AT NIGHT IN THE OLD DAYS

$0.75 *Per Capita?*

THE Tacoma, Wash., per capita cost of $1.08 for street lighting is going still lower because the municipal-power rate has been dropped from 1 cent to ½-cent per kwh.

Lamps Light Streets Instead of the Sky

EAST AVENUE, ROCHESTER, N. Y.

By HAROLD W. BAKER
City Manager, Rochester, N. Y.

ALWAYS a pioneer in good street lighting, Rochester has installed on East Avenue 135 modern units which permit illumination fitting modern traffic and have the capacity to meet future traffic requirements.

The new system replaces an arc-lamp system installed in 1912. There were 75 arc lamps spaced 170 feet apart in staggered arrangement. Although the old lamps furnished 95,800 cp against 97,800 cp of the new system, they spread their light in all directions—as much upward as downward. By sending the light down at a 75-degree angle, the new equipment shows 50 per cent more *street*-lighting efficiency.

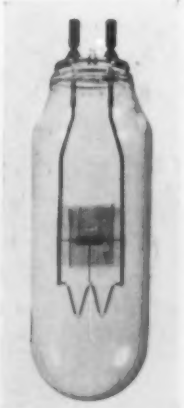
The General Electric 81-D luminaires, with Alzak aluminum reflectors directing the light down onto the roadway, are mounted 20 feet high on Union Metal poles spaced 100 feet apart and staggered. Lamp sizes vary from 10,000-lumen in the business district (Alexander to Goodman Street) to 6,000-lumen in other areas.

It is expected that there will be fewer night accidents during the next seven years than the number reported by the Police Department in 1931-1937—166, including 4 deaths, out of a day-and-night total of 294, including 5 deaths.

We shall watch the accident toll on relighted East Avenue with a great deal of interest, and I believe that the relighting, together with center-lane marking of the street, and installation of additional traffic signals and their synchronization, will lower the accident record.

New Street Series Lamp

OUTSTANDING in the field of street lighting is the development of 10,000-lumen and 15,000-lumen, 20-ampere base-up series lamps with hard-glass bulbs and bi-post bases. These lamps, designed for lighting arterial streets, eliminate water breakage and permit better control of the light, through greater accuracy of manufacture and the opportunity to index the filament in the most advantageous position. A screen grid attached to the filament leads collects particles of tungsten evaporated from the filament and thus helps to reduce bulb blackening.



ROBERT W. MORRIS,
General Electric Co., Cleveland, Ohio.

Worcester Indexes Street Lights

THIS year for the first time we have some figures on street-lighting costs, and we expect to have more next year as the result of WPA mapping and indexing of street lights. Unit 1938 costs in this city of 200,000 are $1.32½ per capita, $35.56 per unit, $6,899 per square mile, a minimum of 6 cents per running foot and a maximum of 90 cents.

HORACE H. BIGELOW,
Acting Superintendent of Street Lighting, Worcester, Mass.

Pedestrians Find a Friend

WITH definite results attained in the country's drive for traffic safety—indicated in a 20 per cent drop in motor deaths in 1938 as compared with 1937—new emphasis on pedestrian safeguards will feature the organized traffic safety effort during the year ahead, according to the American Automobile Association. "The situation is particularly acute in cities," said Thomas P. Henry, President of the national motoring body, "where the percentage of pedestrian deaths in traffic ranges from 60 per cent upward. Obviously, pedestrian protection is a key to better traffic safety records in metropolitan areas."

Brighten Buffalo Streets?

IT DOES not take statistics or a traffic engineer to prove how great a part the lighting of streets plays in traffic accidents in Buffalo. Every motor-car driver, driving at night, knows how often he escapes hitting a pedestrian barely visible until close at hand, on a wet night, with the level glare of approaching cars, the reflection of the pavement, and the low-placed street lamps. Contrast this with the high-hung sodium lamps beyond the city line to the east. The matter of street lighting as an element in traffic safety needs the attention of the city authorities, through a competent scientific study of the subject and a rectification of the present antiquated set-up.—*Buffalo Municipal Research Bureau Inc.*

MARCH, 1939

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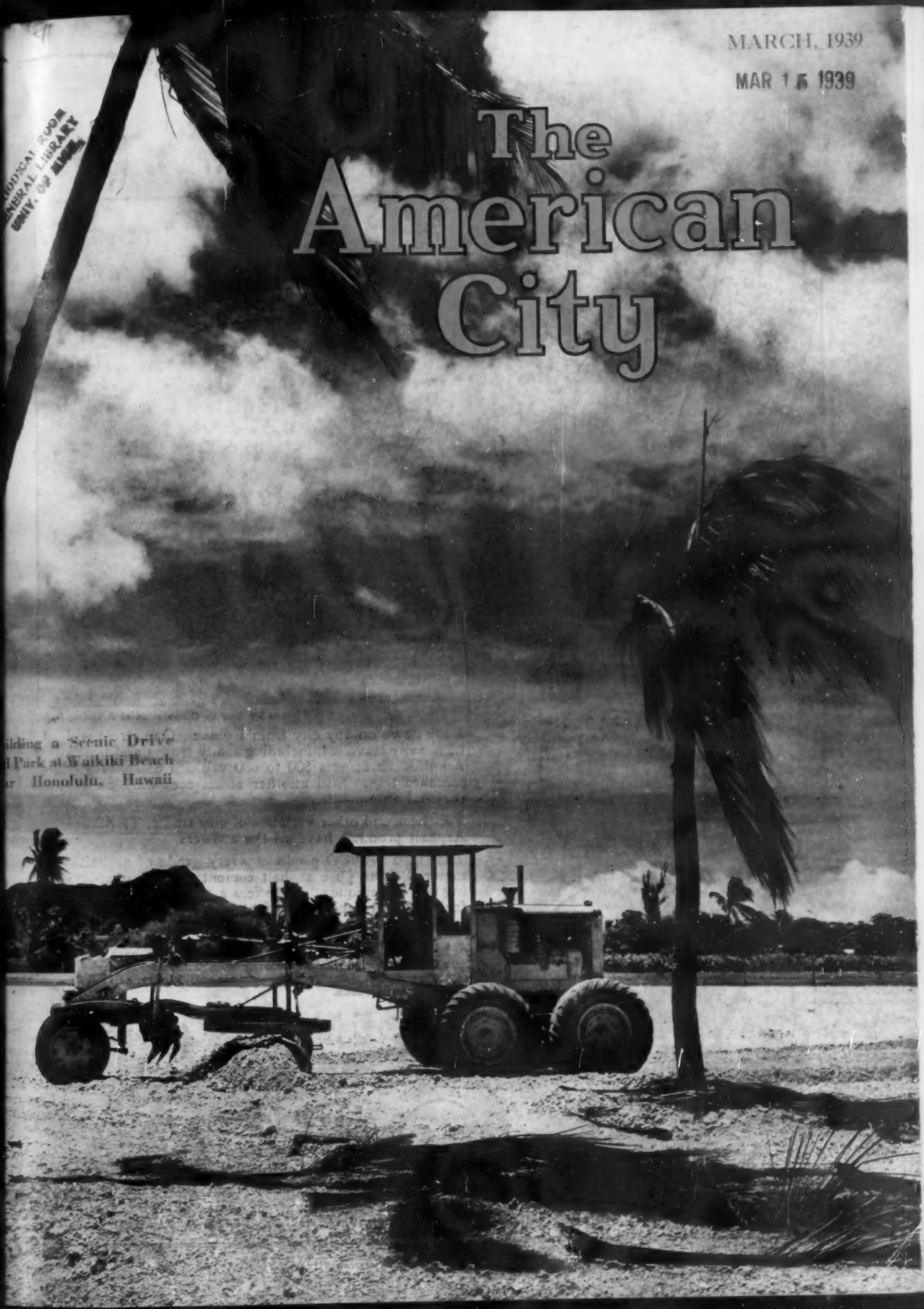

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l Park at Waikiki Beach
ar Honolulu, Hawaii